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A consolidation of FIRE AND WATER ENGINEERING AND THE FIRE ENGINEER

The Journal of the Fire Protection Profession

OCTOBER 29, 1930

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RUBBER BUNKER COAT

Gives You Real Protection

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Brief Description:

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(6) Coat is double stapled throughout.

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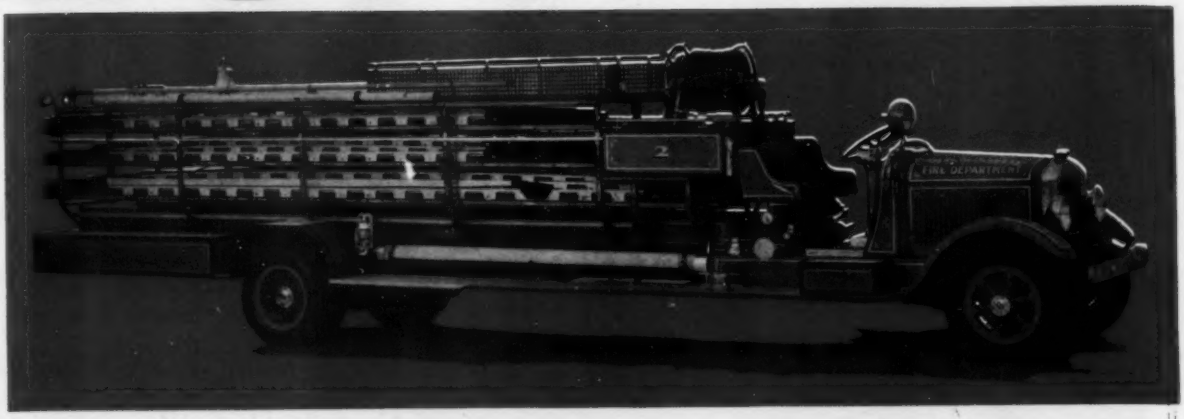

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FIRE ENGINEERING

A Consolidation of FIRE AND WATER ENGINEERING and THE FIRE ENGINEER

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IF you need new equipment, more fire stations, additional men, now is unquestionably the psychological time to expect such requests to be heeded.

¶ All the alibis, explanations, theories and whatnots that we have been hearing about the business situation boil down to the simple fact that men and industry have got to be put back to work if we are to have a return to normal conditions. To accomplish this doesn't necessarily mean being extravagant. It will be enough as a starter if we sidetrack false economy programs and employ the men and buy the equipment we actually need. Who is in better position than city governments to take the lead?

¶ Our good old U. S. has come through 15 depressions during the past fifty years and each time has risen to greater heights than ever before. What was done before can more easily be done now, but let's all pitch in and start the ball rolling.

¶ After all, the best fire prevention work we can do is to help the return of prosperity. Isn't that reason enough?

The Publishers

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FIRE ENGINEERING

(A Consolidation of Fire and Water Engineering and The Fire Engineer)

The Journal of the Fire Protection Profession

VOLUME LXXXIII OCTOBER 29, 1930 NUMBER 22

Fire Inspection System of a Volunteer Fire Department

Series of Blanks in Use—Complete Check on All Fires and Those Who Have Them—Records and Methods of Inspection

By CAPTAIN EVERETT H. RUNKLE, In Charge Fire Prevention Bureau, Corvallis, Ore., Fire Department

THE following description of the plan of operation of a Fire Prevention Bureau Inspection system is particularly interesting in that the department is entirely composed of volunteer firemen and that the cost of installation is within the reach of the smallest fire department:

Captain Everett H. Runkle

The Corvallis Fire Prevention Bureau is the outgrowth of a long felt need of further advancement in scientific fire prevention methods. Under the old system a Fire Marshal was appointed by the Fire Chief to perform the duties incident to that office such as maintaining a record of fires and alarms received, inspection of buildings, making recommendations for improvements and such investigations as were necessary. The appointee was a volunteer fireman and received no compensation for his services. This man performed his duties in his own spare time whenever it was convenient.

The office of Fire Marshal was not provided for in the by-laws of the Fire Department until December, 1927, although an appointee with the title of Fire Marshal was assigned to perform those duties by the Chief, prior to this. The first recognition made by the city council of a Fire Marshal was a clause in the building code passed in June, 1928, establishing the office of Fire Marshal and authorizing the Chief of the Fire Department to appoint a fire marshal subject to the confirmation of the Mayor and City Council. The Fire Marshal in office at the time continued to serve in that capacity but the appointment was never sent to the Mayor and Council for confirmation.

In November, 1929, on the recommendation of the Fire Marshal, a committee was appointed by the acting Chief, Percy Tallman, to investigate the advisability of organizing a Fire Prevention Bureau. On December 3, this committee reported favorably on the matter and the work of organizing the Bureau was assigned to the writer by Chief Graham.

Organization Plan of Fire Prevention

After considerable study and investigation the following plan of organization was adopted:

The head of the bureau was to be a chief officer with the title of Chief of the Fire Prevention Bureau. This appointee

CORVALLIS FIRE DEPARTMENT
Officers' Fire Report

Date..... Box or Tel.....
Time..... Dismissal.....
Street and No.....
Description of Building { Frame / Brick / Stone } .....Stories.....
Owner .....
Occupant .....
How occupied .....
Floor in which fire originated ..... Floor to which fire spread .....
Adjoining buildings to which fire spread .....
Cause .....
How extinguished .....
Kind of Chemicals used.....Amount .....gals.
Hose used—3½-in.....ft. 2½-in.....ft. 1½-in.....ft.
Ladders raised.....ft. No. of salvage covers spread .....
Hours engine pumped.....
Officer in charge.....rank.....
Companies present—Engine.....Truck.....Squads.....
Violation of Fire Ordinances—Make report on reverse side:..
Value of Building....$..... Loss .....
Ins. on Building.....$..... Paid .....
Value of Contents....$..... Loss .....
Ins. on Contents.....$..... Paid .....
Remarks: .....
.....
.....
Signed .....
Rank..... Engine / Truck / Squad .....

REPORT HERE VIOLATIONS OF STATE FIRE LAWS OR CITY ORDINANCES

(Do not write below this line)

Checked by.....Date.....
Inspected by .....Date.....
Re-Inspected by .....Date.....
Hazard abated .....
Remarks

Signed .....
Rank .....

Fig. 1—Officers' Fire Report

Form 5

CORVALLIS FIRE DEPARTMENT

BUREAU OF FIRE PREVENTION

No.....

FIRE RECORD CARD

Street..... Description of Building.....

DATE	OWNER and OCCUPANT	CAUSE OF FIRE	REMARKS

Fig. 2—Corvallis Fire Prevention Bureau Fire Record Card

was ex-officio Fire Marshal. A captain was in charge of records and assistant to the Chief of the Bureau, and two lieutenants were district representatives. The city was divided into two districts and a lieutenant placed in charge of each one. These lieutenants investigate complaints, make recommendations, complete fire reports, and make or supervise the inspections of buildings within their districts.

The question as to whether two men are sufficient has been raised and indications point to the increase in the number of districts to three and an additional lieutenant added to the personnel of the bureau for this district. This will mean smaller districts and will enable the men to accomplish more.

Fire Record System

With the completion of the organization of the bureau an improvement in the record system was undertaken. Under the old system a record book was maintained in which was entered a record of each fire in order of occurrence. The data was entered by anyone and no one person or group of persons were charged with this important duty.

Under the new system each piece of apparatus is equipped with a book of blank fire reports. This book is made of leather and has a pencil inserted in a leather holder. A sample of the fire report blank is shown here. (Fig. 1). On the front side are the necessary places for entering the data pertaining to the fire, the activities of the department and the valuation involved. On the reverse side is a place for noting any violations of the various state laws and city ordinances.

Fire Record Card

All officers of the Fire Department are charged with the responsibility of seeing that a report is made out for each fire. Upon the return to quarters this report is handed to the Chief of the Fire Prevention Bureau or his assistant who sees that it is entered in the daily fire record book and the house journal. If the report is not complete it is turned over to the lieutenant of the district in which the fire occurs for securing the necessary data for completion. As soon as this is done he returns the report to the office where the final data is entered in the fire record book.

But we are not done with this report yet. Over in a card index file we find a card bearing the number of the house, the name of the street and a description of the building. (Fig. 2).

In the column headed "Date" we enter the date that the fire occurred, in the next column the owner and occupant of the building and in the third column the cause of the fire. A fourth column headed "Remarks" is provided for further explanation such as the point where the fire originated should the entry in the third column not fully explain this.

Individual Record Card

With the entry of the data on this card complete we now turn to a second file where we find a card bearing the name

(*Continued on page* 938)

INSPECTION REPORT

Town .....
Street .....
Owner .....
Tenant .....
Occupancy:
Second floor .....
Third floor .....
Basement .....
Construction .....Stories.....
Condition of building .....
Condition of electrical wiring .....
Condition of stove or furnace.....
Condition of chimney .....
Rubbish, trash or ashes .....
Oil or explosives stored .....
Inside protection .....
Recommendations .....
.....
.....
.....
.....
.....
.....
.....

Fig. 4—State Fire Marshal's Inspection Report

NAME ..... DATE .....
LOCATION .....
VIOLATION:
RECOMMENDATIONS:
If additional space is Needed use reverse side.
Checked by ..... Date .....
Verbal notice given M..... Date .....
Written notice
Served on M..... Date .....
Inspected by ..... Date .....
Re-Inspected by ..... Date .....
Hazard abated ..... Date .....
Report filed by ..... Date .....
APPROVED:
.....
(Rank).....
FIRE MARSHAL
.....

Fig. 6—State Fire Marshal's Violation Report

Paper and Rag Storehouse Fires

Difficult Fires to Handle—Floor Failures Common—Dense Smoke is Characteristic

IT HAS often been said that the waste paper and rag warehouse fire costs more to extinguish than the value of the property saved. While this may be true, insofar as the stock is concerned, frequently the structure itself is comparatively modern, and the destruction of the building represents a considerable loss. Stock is usually piled high on all floors, due to the necessity of economizing in space. The more modern establishments have baling machines in which waste paper and rags are baled. Naturally then in the baled form these materials represent considerably more waste per unit of volume than when loose. However, they do not burn as readily in the more compact form and the extinguishing problem in such an instance is not as severe as in the case where materials are stored in bulk.

The small waste establishment usually occupies a dilapidated frame or brick and joist building while the larger concern may use a reinforced concrete structure. It all depends on the scale on which operations are conducted.

But the materials themselves, once they take fire, act the same in all cases.

Probably the greatest hazard in connection with this type of fire is the likelihood of floors falling. Records of this type of fire indicate that in a very large percentage of cases, where an entire building is involved, the floors give way long before they would be expected in any other type of fire due to the absorption of great quantities of water by the stock.

When stored loosely, these materials may absorb several times their weight in water and the combined weight is frequently sufficient to pull the floor beams out of their supporting positions in the wall with the ultimate result of landing either on the ground floor, or else in the basement.

Another factor which must be considered in fires in this type of structure is the tendency of materials to expand when wetted. This applies particularly to paper. In one large fire in New York where rolled paper was stored, in expanding it exerted sufficient pressure to

A Typical Case of Floor Failure

Note the comparatively small fire damage in the interior of this rag and paper warehouse, although all the floors in the front part of the building were carried through by failure of the upper floors. This occurred in a seven story building in New York City in 1927. Three firemen were killed, ten others were injured. Note the baled rags on the top floor.

Water Soaked Paper Displaced Wall at This Fire

A few years ago, when the James Street, New York, warehouse burned, rolled paper on one of the floors expanded upon been wetted and forced a wall free of the ends of the floor beams, although the building was a reenforced concrete structure. This view is an aerial picture taken after the fire was under control.

force the walls away from the beam ends of a modern reinforced concrete structure.

The vast clouds of pungent smoke thrown off by the waste fire makes it particularly difficult for the firemen to handle. It is often impossible to get at the seat of the fire even though it is still in its early stages, and the use of liberal quantities of water is thus made necessary, whereas if the lines could be stretched to the point where the fire is burning, but a few minutes work would be required to darken the blaze.

Naturally ventilation is of prime importance at the fire in this type of establishment. If thorough ventilation is accomplished, the work of the men will be very much eased up and the saving may be considerable.

Due to the danger of floors falling, where large streams may be in operation, or when small streams have been in operation for some time, men must be kept out of the building entirely and operations carried on

Four Lives Were Lost At This Waste Paper Plant

Four persons lost their lives and fourteen others were injured at a fire in a four story waste paper plant at Baltimore, Md. a year ago. Note the tremendous volume of smoke being thrown off by the burning material. The department did good work in confining the fire to one structure.

from window sills, from roofs of adjoining buildings, and from other points of vantage.

More men are knocked out or injured per dollar of value involved at the rag or paper warehouse then possibly at any other fire handled by the average department.

The small establishment fire does not represent much of a task for the fire department, for if the concern is located in a dilapidated building little attention need be given to saving property. The salvage will not be great in any case, once the fire is extinguished, and the structural damage to the building need not be considered.

On the other hand, where a large modern building is involved, the same care must be exercised as would be exercised at any other mercantile building blaze.

As usual, the first operation at this type of fire is to ventilate thoroughly—even more so than in most types of establishments. Then more lines are stretched to the scene of the fire if men can penetrate the building. Usually a dash of water will darken the fire, and then the work of overhauling the mass comes in.

In overhauling it is necessary to completely remove the stock to make sure that every bit of fire is out. A remaining spark may again rekindle the fire after the department leaves and the work will have to be done all over again.

It is only where fire has extended so as to involve an entire floor and require large quantities of water that great care must be exercised on the part of officers to keep the men from the floors beneath. It is not likely that floors will be weakened by fire in the early stages of the blaze sufficiently to cause their collapse; and the result of survey of a great number of fires in this type of establishment indicates that in practically every case the floors give way due to overloading incidental to discharge of large quantities of water on the burning materials.

Drill School to Be Held in Corinth

A fire department drill school is to be held in Corinth, Miss., under the supervision of Chief W. L. Stroup and Sherwood Brockwell of Raleigh, N. C. Mr. Brockwell is Vice-Chairman of the Fire Marshals Section of the National Fire Protection Association. He is also on numerous other fire prevention committees and is Fire Marshal of North Carolina.

Jersey City Has Active Prevention Week

Fifty thousand "Fire Don'ts and Warnings" were distributed by the uniformed force of the Jersey City, N. J., fire department to thirty-nine public schools and nineteen Parochial schools during Fire Prevention Week. In conjunction with the Bureau of Combustibles and Fire Risks, 30,000 inspections were made of all classes of property. Considerable literature and a large number of signs were also distributed.

Officers lectured on fire prevention before school children and also conducted drills. They also lectured on this subject before motion picture audiences and industrial plant groups.

In summing up the Fire Prevention Week activities of his department, Chief Roger Boyle estimated the number of persons reached by these lectures as follows: Public schools, 32,000; high schools, 9,700; parochial schools, 17,270; hospitals (internes, nurses and orderlies), 730; theatres and motion picture houses, 26,200 and industrial plants, 14,000.

P. Hildreth Parker Re-elected

At the annual meeting of the Box 52 Association, Inc., of Boston, Mass., held on October 15 at 30 Huntington Avenue, Boston, P. Hildreth Parker was re-elected President. The other officers chosen were as follows: Frederick W. Kurth, Vice-President; George W. Austin, Treasurer; Harry J. Rockett, Secretary; and Frederick Blake, Assistant Secretary.

The following were named as members of the Executive Committee: William B. Corcoran, Albert W. Daniels, William E. Dolan, and C. Elmer Gane.

The annual reports of the officers were received and plans outlined for an active year.

HARRY BELKNAP.

Montana Firemen Will Meet in Bozeman

The 1931 convention of the Montana State Firemen's Association will be held in Bozeman, Mont., July 13-16. Through the cooperation of the Montana State College, a fire school will be conducted during the first three days, and the entertainments and convention meetings will be crowded into the last day.

Port Huron to Vote on Pension—At the November election, Port Huron, Mich., will vote on a charter amendment to provide a retirement fund for firemen, and other city officials.

THE ROUND TABLE

For Practical Discussion of Current Fire Department and Fire Management Problems

PICTURE, if you can, how serious an accident would result if the front tire on a heavy piece of fire apparatus blew out while the apparatus was traveling at a high rate of speed to a fire. Pneumatic tires are designed to support safely the full load of the apparatus and to ease the rough spots on the highway.

Unlike the inflated tires on the pleasure-type automobile, pneumatic tires on fire apparatus rarely wear out. They age out. Compared to other type automobiles, the yearly mileage of fire apparatus is small.

On fire apparatus, the tires are subject to dry rot. As soon as this aging process is detected, the apparatus tires are changed.

In the box on this page is the problem that is discussed in this issue. In the box on the following page is the question that will be treated in the next issue. Should you have some comment that you would like to add to the problem, you are invited to write to the "Round Table Editor," FIRE ENGINEERING, 24 W. 40th St., New York, N. Y.

HERE IS THE PROBLEM

How long should pneumatic tires be on fire apparatus before they are changed?

What records do you keep of pneumatic tires?

What use do you make of tires too old or worn for fire service?

The Question

There appears to be two schools—one that favors the replacement of pneumatic tires after five years of service and the other that has set four years as the limit. Some chiefs even favor replacing tires after they have seen a shorter period of service. The replies received follows:

Richard L. Smith, Chief, Pittsburgh, Pa.: Our experience here in Pittsburgh has proven that we can keep tires on apparatus for over six years without being changed. This opinion is expressed due to the fact that we had a pneumatic tire that was taken off after six years' service due to an injury to the outer portion of the side wall. Tire experts were consulted relative to the condition of this particular tire and they expressed the opinion that it would be good for at least four years more unless damaged by being cut through or otherwise. Would say, however, that if the tire is damaged by being cut clear through the inner fabric, it does not pay to have same repaired, and as a matter of safety it should be discarded.

Records are kept of all pneumatic tires as to their date of service, mileage, etc., injury and repair to same.

We make use of old tires by cutting them up and using them in our squeegees.

Victor H. Veit, Chief, Stamford, Conn.: I believe I am one of the first chiefs who ordered a change from solid to pneumatic tires on fire apparatus, this change starting March 5, 1919.

Tires should not be used on fire apparatus longer than five years as the rubber deteriorates and they are not dependable if used longer than this length of time. I have made it a practice of changing tires every five years and have not experienced any tire trouble.

A record is kept of the date when purchased, when installed (front or rear), when changed (from rear to front or spare), and when discarded.

We sell them to anyone who has a truck that can use them.

J. Lester Howland, Chief, Hyannis Fire District, Barnstable, Mass.: Being a small department we keep no record of tires. We have had two tires on one piece of apparatus for over six years and they are now considered by our department as serviceable. Four tires size 36" x 8" on another piece of apparatus, which are now in their fourth year, are considered in good condition also. Our tires are subjected to scrapes, bruises and cuts, due to traveling over rough ground at brush fires and being bogged when drafting from ponds and streams. Cuts and scrapes are filled with rubber by our tire man to prevent rotting of fabric. We do not keep spare tires as we find a tire will deteriorate from non-service more quickly than when in actual use. We have a number of men on our department who are familiar with tires, and when a tire reaches the doubtful stage, same is reported to the chief and a new tire is ordered immediately.

F. J. May, Chief, Mansfield, O.: We keep a daily and weekly drivers and mechanic's card file of all tires in service and can at a glance obtain any desired information. We have one spare tire for each rig which I believe should get some service, and by this means interchange tires every month. I believe this practice to be better than having the tire laying around waiting to be used. As a general rule it is not the mileage of service rendered by a tire, but rather inactiveness which causes dry rot, and is therefore the greater factor to be overcome.

Tires are traded in whenever their condition becomes doubtful, as it does not pay to take chances in fire truck equipment.

James M. Casey, Chief, Cambridge, Mass.: I should say that pneumatic tires ought to be renewed every five years as they are liable to vulcanize if permitted to stand where there is heat and the apparatus not used very often. Where the apparatus is called out every two days or so, they will last longer.

We have but two pieces of apparatus which are equipped with pneumatic tires, and these are inspected every day and also after each run, to make sure they are O.K.

Have not had to discard any pneumatic tires as yet, so cannot say whether it will be possible to trade them in or if we will have to resort to junking them.

W. H. Mitchell, Chief, St. Joseph, Mich.: Our trucks average about three hundred miles per year and we find that we are perfectly safe in using tires for five years. In the past we have used them as long as nine years without trouble, but I believe five years would be the better practice to follow.

Formerly we had in other city departments, apparatus which used the same size tires as those used on fire trucks and then our tires were transferred to these departments, but now we trade them in and let the dealer dispose of them.

We always put new tires on the front wheels because blowouts in front cause more damage to fast moving apparatus than would rear punctures.

Samuel H. Jeffries, Chief, Wilkinsburg, Pa.: New tires were placed on one of our pumpers June, 1926, and they look good today. After each run the tires are washed and looked over for cuts and bruises. On our chemical truck which was placed in service March, 1927, I have had to replace both rear tires as they developed splits about 1 inch wide and 2 inches long. I was then afraid to take any chances with the front tires, so received an adjustment on four new ones. These tires were in service less than three years.

A monthly report stating the mileage covered by each piece of apparatus, etc., is the only check-up we keep on tires.

If when buying new tires we can not get an adjustment on the old ones, the borough gives the old tires to the company from whom the purchase is made.

Arthur J. Rahn, Chief, Two Rivers, Wis.: Pneumatic tires should be changed every three years at the very most. Tires never wear out on fire apparatus, they deteriorate. No chief in my opinion should risk longer service on tires. I had one set on a small truck that was in service a little over five years and when the tubes were taken out they could be torn apart with a person's fingers. Externally they looked perfect.

The only record kept on tires is the date of purchase and number of miles traveled. Old tires are traded in when new ones are purchased.

Thos. J. McCarrick, Chief, Revere, Mass.: We have always purchased high grade tires, and it has been our experience that pneumatic tires of the heavy duty type, such as is used on fire apparatus, lasts about four years. This I believe to be a fair average as the following table indicates:

RECORD OF TIRES IN SERVICE MORE THAN THREE YEARS

DATE	SIZE	JUNKED	
6/4/26	40 x 8	2/14/30	Blow out, very little wear
6/4/26	40 x 8	5/ 4/29	Blow out, very little wear
6/4/26	40 x 8	1/18/29	Blow out, very little wear
6/4/26	40 x 8	7/18/30	Apparently in fair condition
5/7/26	40 x 8	8/29/30	Blow out, very little wear
5/2/26	40 x 8	6/30/30	Blow out, very little wear
5/2/26	40 x 8	6/30/30	Apparently in fair condition
5/2/26	40 x 8	12/13/29	Blow out, very little wear
3/1/24	40 x 8	4/12/29	Apparently in fair condition
3/1/24	40 x 8	4/12/29	Apparently in fair condition
5/2/26	38 x 7	8/ 1/30	Apparently in fair condition
3/1/24	40 x 8	10/ 3/28	Wore smooth
3/1/24	40 x 8	10/ 3/28	Wore smooth
3/1/24	40 x 8	4/12/29	Wore smooth
3/1/24	40 x 8	4/12/29	Wore smooth
5/2/26	40 x 8	8/29/30	Blow out, very little wear
5/2/26	40 x 8	6/14/30	Blow out, very little wear

Of the eight blow outs referred to above, seven occurred in quarters. Prior to blow outs, tires appeared to be in perfect condition. After first blow out we had all heavy duty tires removed from apparatus and examined by a tire expert who pronounced them in good condition, still within six months of the examination the other seven tires blew out. I have therefore come to the conclusion that four years of service is enough to expect.

We keep an accurate record of every tire purchased, the record includes: Date of purchase, size, serial number, manufacturer, tire mileage, date junked and reason for same.

In order to close out the tire record of each particular tire, the dealer accepts the old tire and allows a credit of two dollars, this trade is made merely to close the record.

Geo. P. McGillen, Chief, Appleton, Wis.: All our apparatus is equipped with pneumatic tires. The tires on our first two pieces of apparatus have been on for five years. Recently I had these tires inspected and tested, and finding them in very good condition, decided not to make any change for at least another year. I believe there is that much more service in these tires barring an accident.

When we get through with these tires no doubt they will be turned over to the street department, providing, of course, they are still serviceable.

J. J. Bast, Chief, Edwardsville, Ill.: Tires on fire trucks should be changed every three years, if not worn out before that time.

Complete record of all tires is entered in record book and checked weekly for air pressure, etc.

When tires are worn or too old for fire truck service, we exchange them for new ones and get a rebate on same.

Ray H. Hare, Chief, Yakima, Wash.: In order to minimize delays due to tire trouble, we equip our apparatus with especially good tires. Every two years they are renewed regardless of the mileage.

Records are kept of the date of purchase, brand and tire number.

Used tires are traded in at a very liberal allowance.

C. E. Griesser, Chief, Bryan, Tex.: We have no set rule as to how long tires shall be in service. The condition of the tires governs this.

The serial number of the tire is taken and a record sheet is made for this tire, showing date when installed, and other items concerning that particular tire. Tires that are unfit for further service are sold as junk.

B. L. Warlick, Chief, Jackson, Tenn.: We have used pneumatic tires on fire apparatus for four years without changing, but, I would recommend that they be changed every 2½ years, as they will rot on a truck and still look like new.

I keep a complete record of each tire in service.

We generally trade-in old tires when purchasing new ones, or in cases where not accepted in this manner, they are sold as junk.

V. S. Whiteside, Chief, Tupelo, Miss.: I don't know how long pneumatic tires should be kept on fire apparatus. We have just replaced one set which were on the apparatus for five years and they still look good.

Records are kept showing date of purchase, etc.

Old tires are sold for whatever can be obtained for them.

Geo. W. Hedden, Commr. of Fire, Buffalo, N. Y.: Pneumatic tires should be on fire apparatus approximately four years before they are changed.

We keep a record of the date purchased, when placed in service, date scrapped and tire number.

Tires too old or worn for fire service are scrapped.

H. L. Taylor, Chief, Rome, Ga.: I consider pneumatic tires unsafe for fire service after four years of use.

When new tires are put on our fire apparatus we make a record of the date, make of tire, number of tire, and on which wheel installed; this gives us a complete check on each tire.

When we replace our tires the dealer allows us some credit on the old tires if they are not in too bad a condition.

Frank D. Shaw, Chief, Greensboro, N. C.: As the average fire apparatus is not used enough to wear out a tire before age deteriorates the life of the rubber, it is dangerous to run the pneumatic tire for a period of more than three years.

A record is kept of the mileage, age of tire, pressure and load which it carries.

Our tires are turned over to the street maintenance department as the tires are interchangeable with their trucks.

Edward J. Green, Chief, Steubenville, Ohio: Pneumatic tires on fire trucks are kept in service for three years and then traded in on new ones. While our tires are

(*Continued on page* 937)

HERE IS THE PROBLEM FOR THE NEXT ISSUE

What type programs would you suggest for monthly fire company meetings?

What are the subjects discussed?

Are drills held at this time?

With the Editor

The Chief and the Public

The Chief of the Fire Department has many heavy responsibilities but there is one of these which perhaps is among the most important of all. It is his relation to the people of his city or town as an adviser in all matters relating to fire prevention and fire preparedness. This is one of the most intimate contacts with his public, and the citizens should be educated to a habit of referring all matters pertaining to the protection of the home, the factory and the business establishment to his judgment before taking action.

A suggestion along these lines has been made by Franklin H. Wentworth, Managing Director of the National Fire Protection Association. Mr. Wentworth points out that people who are intending to buy fire extinguishers for home use should first consult their Chief before making such purchases.

This is most logical. The Chief, by reason of his position and his education, is the one individual who is best suited to advise the citizens in every detail of fire protection. He is an expert in such matters and in that capacity should be consulted before purchases of fire-fighting devices are made by the householder, the manufacturer or the business man of the municipality.

The Chief should feel no hesitancy in assuming this authority. Self confidence in this regard is not only perfectly justified on his part, but he owes such a stand to the community which he serves. If the people are in danger of being deceived into buying devices which are unsuitable for the purposes which they are represented to serve, the Chief is the one individual who can save the citizens from being led into a wrong decision and show them the correct type of protective device for the particular service desired. By so doing he will greatly advance the cause of fire prevention, and at the same time earn the gratitude of his public.

Taking Care of Injured Firemen

A proposal has been made recently to build in the city of Boston, Mass., a hospital to care for crippled and permanently injured firemen. This idea originally came from a crippled Newton, Mass., fire fighter, who was permanently disabled in line of duty. In his letter to FIRE ENGINEERING, he said in part:

"I have had the impression that Boston would benefit by having a hospital for injured firemen such as Long Beach, Cal., is building now. There are many injured firemen in this section. What do you think of the idea? I have spoken to several Massachusetts Chiefs of this proposition and they all have endorsed it."

Any plan looking to the care of firemen disabled in the service deserves the unqualified support and encouragement not only of the fire-fighting profession, but also of the citizens in general. The fireman, whether he be a municipal employee or a volunteer, takes his life in his hands every time he answers an alarm of fire. He never knows into what danger he may be rushing or whether he may be called upon to face disablement or death in the service of his fellow citizens, and the preservation of them from the perils arising from fire. If to save a life he must imperil his own, or even, if need be, sacrifice it, this is all in the day's work and is to be expected of him!

It seems, therefore, when such a sacrifice is necessary and the fireman emerges from the battle with fire crippled in limb or body and unable to support himself, the least that the municipality which he has so served can do is to provide him with shelter and care, so that his remaining days may be made as comfortable and free from pain as possible under the circumstances.

If this care involves expenses, as of course it must, the municipality and the private citizens should combine to see to it that the disabled fireman is well taken care of.

If Long Beach can establish such a hospital, surely other cities throughout the land can follow its example and either by public appropriation, private subscription, or both, found similar institutions to take care of their injured fire fighters. In such institutions, if hurt in the performance of their duties, they may be nursed back to health and strength, or, if permanently disabled, they can be given care and shelter for the rest of their days. This is the least that a community can do for its fire fighters.

The idea as suggested should be pushed to fruition, not only in Boston, but in other centres of the country, so as to cover practically the whole land.

The Fireman's Condition Then and Now

An interesting comparison is made by *The Citizen's Business*, the organ of the Philadelphia Bureau of Research, between the salaries of firemen of that city in five year periods between 1915 and 1930, and the comparative purchasing power of such salaries during those years.

In 1915, according to these statistics, the salaries of firemen in Philadelphia were at a much lower mark than those of many other cities, while each of the five year periods since that time has seen a gradual increase, until such salaries today are 100.75 per cent higher than in 1915.

The relation of salaries to the cost of living expenses

in Philadelphia, according to this authority's compilations, is today much improved in comparison to the earlier period. For instance, in 1920, the cost of living had increased over 1915, owing to war and other conditions, 110.97 per cent., while the firemen's wages had increased only 47.27 per cent. On the other hand at the present time the increase in living is only 67 per cent higher than in 1915 and the firemen's salaries have increased 100.75 per cent.

However, we fear, this decidedly roseate view of the salary situation in the Fire Department will not apply with equal force to all other municipalities. In many of these the advances in salaries, from the Chief down, have by no means been as steady or generous as the cases cited. In many of these, in fact, the members of the Fire Department are among the poorest paid of the city employees, in comparison to the service rendered.

A significant paragraph in the article referred to reads: "Quite obviously the three large special groups of city employees" (including members of the Fire Department) "have been accorded more generous treatment than the other classes of municipal civil servants. The administrative, professional, skilled and clerical workers, *upon whom the major responsibilities fall,* (the italics are ours) "have been rather neglected in the payroll revisions of the last 15 years."

The classing of the members of the Fire Department in the same groups with unskilled laborers in this compilation is bad enough, but the placing of the burden of responsibility on the shoulders of the clerical force as compared to that of the fire fighters, is ridiculous. Who if not the Fire Chief and his men bear the burden of responsibility for the lives and property of the citizens? To whom rather than the Chief and his men do the citizens turn when the peril of fire looms?

The fireman, from the Chief down, is essentially a skilled worker. He must know at least the rudiments of chemistry; he must know considerable of building and its relation to fire prevention and fighting; he must understand the science of water pressure in its relation to his work, and besides all this, he must know his city and its buildings, especially the district which he guards. If a fire breaks out in a certain building, he must possess a foreknowledge of the layout and peculiarities of that building, in order to intelligently handle such a fire. An error in judgment on the part of an officer of the Fire Department may mean the destruction of this building which otherwise might have been saved.

So, not only is the fireman a skilled worker, but he bears one of the highest responsibilities of a city employee—that of protecting the citizen from fire.

Snapped at the I. A. F. C. Winnipeg Convention

Left, Chief R. L. Azcaretta, Havana, Cuba, Fire Department, in whose city the 1931 Convention is to be held. Right, Thomas R. Johnstone, General Representative of the American Magirus Fire Appliance Company, Inc.

Plenty of Chiefs in Family

Daniel W. Flynn, head of the Fire Department in Great Barrington, Mass., is evidently hoping to develop two more fire department officials. He is shown with his two grandsons, Billy and Dicky Winn.

Chief Flynn and Grandsons

Fire Department Prepares Maps

A series of maps, showing the type and construction of all buildings in the downtown business district of Charlotte, N. C., has been prepared under the direction of Hendrix Palmer, Chief of the Fire Department. Not only do the maps show the type of construction, but they also indicate the location of entrances and exits, the fire escapes and considerable other data of value to a fire department.

Chief Palmer was highly complimented by H. L. Bond, field representative of the National Fire Protection Association, who was in the city recently conferring with city officials.

D. G. SPENCER, JR.

Arson Suspect Given Quick Trial

Five days after two buildings burned on his farm near Algonquin, Ill., Charles Borre had pleaded guilty to arson and was sentenced to the State Penitentiary for a term of from one to twenty years. According to State Fire Marshal S. L. Legreid the case sets a record for speed.

A barn and granary were involved in the fire, but a hog house which stood between them was not touched. When confronted with the evidence Borre decided to confess. The grand jury was in session and he was promptly indicted. He pleaded guilty the same day. The fire occurred September 28 at 2 a.m. and sentence was passed October 3.

Efforts are being made to locate an itinerant salesman who Borre says talked him into having the fire and took fifty dollars as an advance payment for doing the job. Borre says the salesman failed to show up and that he himself decided to set the fire. Financial difficulties formed the motive.

New Apparatus Ordered for Devils Lake, N. D.—A 500-gallon and a 600-gallon pumper has been ordered for Devils Lake, N. D. The purchase is being financed by a recent bond issue.

Questions and Answers

NOTE—Readers are invited to send in questions, which will be answered in the order received. Names are omitted from questions unless otherwise specified

Placement of Engine in Relay Line

To the Editor:

Will you please answer the following problem in an early issue?

With 2,000 feet of 2½-inch hose, a 1-inch nozzle, and two 1,000-gallon pumping engines:

(a) How many lengths (or distances in feet) should the second pumper be placed from the first pumper?

(b) How is the engine pressure at the first engine determined?

(c) How is the friction loss in hose from the first engine to the second engine determined?

(d) How is the discharge into the intake chambers of the second engine from the first engine determined?

J. G.

Answer: In the first place, two 1,000-gallon pumpers would not be required to give a satisfactory stream from a 1-inch nozzle at the end of 2,000 feet of 2½-inch hose.

For a 1-inch nozzle a nozzle pressure of 40 pounds is satisfactory. With 40 pounds nozzle pressure, an engine pressure of 212 pounds would be required to deliver water through the 2,000 feet of 2½-inch hose at 40 pounds nozzle pressure.

A 1,000-gallon pumper can deliver one-third of its rated capacity at 250 pounds pump pressure. In other words, a 1,000-gallon pumper should give in the neighborhood of 333 gallons per minute at 250 pounds.

A 1-inch nozzle at 40 pounds discharges only 187 gallons per minute. Hence from the above it can be seen that a single 1,000-gallon pumper will serve the purpose very well.

But if a 1⅛-inch nozzle is used, then it would be necessary to run the two engines in relay.

The placement of the engines would be in accordance with the following rule:

Rule: Where engine is operating in the neighborhood of 200 pounds pressure, the length of the line from the second engine to the nozzle should be three-quarters the length of the line from the first to second engine.

With a 2,000-foot layout, the distance between the first and second engines, determined by the above rule, would be 1,150 feet (which is the nearest even number of lengths to 1,143 feet, determined by rule).

(b) Determining the engine pressure for the first engine is done in a somewhat reverse manner. The nozzle pressure at the end of the line is first assumed, and from this the problem is worked backward until the desired pressure at the first engine is found.

For example, a nozzle pressure on a 1⅛-inch nozzle ranging anywhere from 40 to 60 pounds is considered satisfactory. Assuming an average of 50 pounds, we would first determine the pressure at the second engine by use of the Underwriters' formula. After the pressure at this point is determined, we would assume that a residual pressure of 10 pounds or thereabouts on the intake side of the second engine must be provided by the first engine.

Knowing the drop in pressure from the second engine to the nozzle, we could easily find the friction loss per section or per 100 feet of 2½-inch hose. As the entire line is of 2½-inch hose, and knowing the friction loss per 100 feet, we can determine what the friction loss between the first and second engines will be. The pressure at the first engine must be sufficient to overcome friction loss and deliver a pressure of around 10 pounds at the intake to the second engine. Thus by adding 10 pounds to the friction loss between the first and second engines, we secure the pressure necessary at the discharge side of the first engine.

(c) As noted in the previous answer, friction loss is secured in the 2½-inch hose by determining the drop in pressure from the second engine to the nozzle. This drop in pressure divided by the number of 100-ft. lengths of hose in the line (or 50 lengths if desired) will give the friction loss per 100 feet (or per 50 feet) as desired. This friction loss holds for the entire layout because the same amount of water is passing through the entire line.

Having determined friction loss per 100 foot length (or per 50 feet) and knowing the distance between the first and second engines, the friction loss in the line between these two engines is readily calculated.

(d) The quantity of water flowing through the line at any point from the first engine to the nozzle is precisely the same as the quantity of water being discharged from the nozzle per minute. Having the nozzle diameter and the nozzle pressure, the discharge can be calculated by the formula: Discharge $= 30 \times d \times d \times \sqrt{P}$ where "d" is the nozzle diameter in inches and "P" is the nozzle pressure in pounds per square inch. The answer will be in gallons per minute. The flow from the nozzle is, as noted above, the same flow that takes place at any part of the line and hence is the amount of water which the first engine is delivering to the second engine per minute.

Auxiliary Fire Protection

To the Editor:

At this institution we have a farm which is about three miles from the main building. The state has dug a well at this farm, about 1000 feet from the barn where livestock to value of $150,000 is kept. In our fire department we have a 750 gallon pumper. The well holds enough water to keep the pump going for one hour. In case of fire in this barn we would have to stretch 1000 feet of hose to reach the barn from the well. I have suggested that a 3-inch pipe line be run from the well to the barn. At the end of this pipe line, near the barn, I would build a hose house holding 500 feet of 2½-inch hose, and connect it to the 3-inch pipe line, such as a standpipe outlet. At the well, on the other end of the 3-inch pipe line, I would have a siamese connection (two 2½-inch into the 3-inch) so that in case of fire at this farm I could drive the pumper to the well, connect in the suction hose, connect two lines to the siamese connection and pump water through the 3-inch pipe line to the hose house where the 500 feet of 2½-inch hose is stored.

I would appreciate your opinion as to whether such a layout would be practical. My idea of installing the 3-inch pipe would be that it would provide a quick way of getting water to the barn in the event of fire.

This layout would save us the trouble of stretching about 1000 feet of hose.

D. G. M.

Answer: The layout you suggest would be a much more efficient arrangement than that at present provided. Time would be saved in getting water on the fire, and fewer men would be needed for the delivery of water to the neighborhood of the farm buildings than in the case where hose lines would have to be stretched in for the full distance.

As the pipe line would not be charged at all times, incrustations would not be apt to form, and for that reason a 3-inch pipe line would probably serve your purpose satisfactorily. It should be self-draining, however.

A still more efficient layout would be to have a cistern built somewhere in the neighborhood of the farm buildings and install a small electrically operated pump at the well to force the water through the pipe line to the cistern. Such pump could be automatically controlled by a float in

the cistern so that the level in the cistern may be maintained to a proper point at all times. This latter layout would eliminate the necessity of the pumper and one or two men going to the well and, instead, would enable the department to concentrate its forces right where needed.

Of course, provision would have to be made to prevent the cistern from freezing over, either by providing a double covering with air space between or in setting the cistern so that the water level would be below frost level in the ground.

Koen Heads Massachusetts Firemen

Deputy Chief James S. Koen, of Salem, was elected President of the Massachusetts State Firemen's Association at the closing session of the 51st annual convention which was held in Pittsfield.

Deputy Chief J. S. Koen

The other officers chosen are: Joseph J. King, of Lawrence, First Vice-President; F. T. J. McNamara, of Swampscott, Second Vice-President; M. Joseph Manning, of Milton, Treasurer; and Daniel J. Looney, of Boston, Secretary.

Capt. John Day, of Lynn; James A. S. Drinkwater, of Cambridge; and Raymond W. Griffen, of Springfield, were elected to the Board of Directors.

Among the speakers at the convention which ended on Oct. 2 were Chief William C. Shepard, of the Pittsfield fire department; Fire Commissioner Edward F. McLoughlin, of Boston; E. E. Williamson, Superintendent of Maintenance, B.F.D.; and Police Chief John L. Sullivan, of Pittsfield.

President Koen is serving his second term as head of the organization, having been first elected in 1927. He now succeeds Chief William H. Hawkins, of Haverhill, who served two terms as President.

HARRY BELKNAP.

Southeast Missouri Holds Fire School

Fifteen towns were represented at the first Southeast Missouri Fire School Short Course held in Kennett, Mo. The school was so successful that an organization was formed under the name of the Southeast Missouri Firemen's Association to see that the school becomes an annual affair. Chief T. E. Kirkpatrick of Poplar Bluff was elected President, Chief S. R. Longgrear of Kennett, Vice-President, and Chief R. D. Boyer of Dexter, Secretary.

The Missouri Inspection Bureau were sponsors of the school. The Bureau had a large amount of equipment moved to Kennett to train the students.

Instructors included Hugh C. Ousley, Fire Department Instructor, Missouri Inspection Bureau; M. I. Parker, Engineer, Missouri Inspection Bureau; George R. Ward, Drillmaster, St. Louis Fire Department; James Whicher, Fire Department Training School, St. Louis; J. Burr Taylor, Secretary, Missouri State Fire Prevention Association; H. J. Woods, Engineer, Missouri Inspection Bureau; R. S. Schuermann, Engineer, Missouri Inspection Bureau.

Luncheon was provided free to the visitors each of the three days of the school, September 16-18. On Wednesday, the men were the guests of the Lions Club.

Talks were given on Care of Fire Apparatus and Equipment, Fire Department Training, Volunteer Fire Department Organization, Respirators and Gas Masks, Salvage Evolutions, Ventilation, Characteristics of Fire Streams, First Aid and Resuscitation, Electrical Fire Hazards, Dangers of High Tension Wires in Fire Fighting, and a demonstration of fire department operations and the use of a number of small appliances.

A demonstration was arranged of the M. & M. Siphon. One hundred feet of hose was connected to the siphon. There was a pit twenty feet long, five feet wide and five feet deep filled with about 3,750 gallons of water. Water was supplied to the siphon at forty pounds pressure and there was a twelve-foot lift. The demonstration showed how water could be removed from pits and cellars without the use of the regular fire department pumper.

Philadelphia Graduates 55 Firemen

More than one thousand persons attended the 55th Class graduation of the Philadelphia Firemen's Training School when fifty-five men received their certificates. A number of "thrillers" such as descending from the roof of the hose tower by means of life line and belt, were arranged for the guests.

After the outdoor exercises were over Chief Ross B. Davis presented each man with a certificate and a word of congratulation. Thomas R. Roche headed the class with an average of 95.5 and was presented with a gold watch, the gift of a local merchant. There were other prizes for second and third on the list. The lowest average was 87.2.

At the close of the exercises, Chief Davis announced that Instructor McGrann, along with other older men of the department, including Deputy Chief Walbert, would go on the retired list.

The Secretary of the Gloucester County Firemen's Association presented Mr. McGrann with a smoking set, and following this, the Gloucester County Fire Chiefs Association of New Jersey presented him with a watch.

EDWARD H. SPRANGERS.

Moorpark, Cal., Considers Apparatus Purchase—Moorpark, Cal., is considering the purchase of Mack fire apparatus to be placed somewhere in Simi valley.

Some of the Chiefs Who Attended the First Southeast Missouri Fire School

FOUR ALARMS TURNED IN FOR PITTSBURGH BAKERY FIRE

In Absence of Chief Richard L. Smith, Deputy Chief Frank G. Jones Was in Charge — Blaze Spread to an Adjoining Residence

By WILLIAM E. PATTERSON

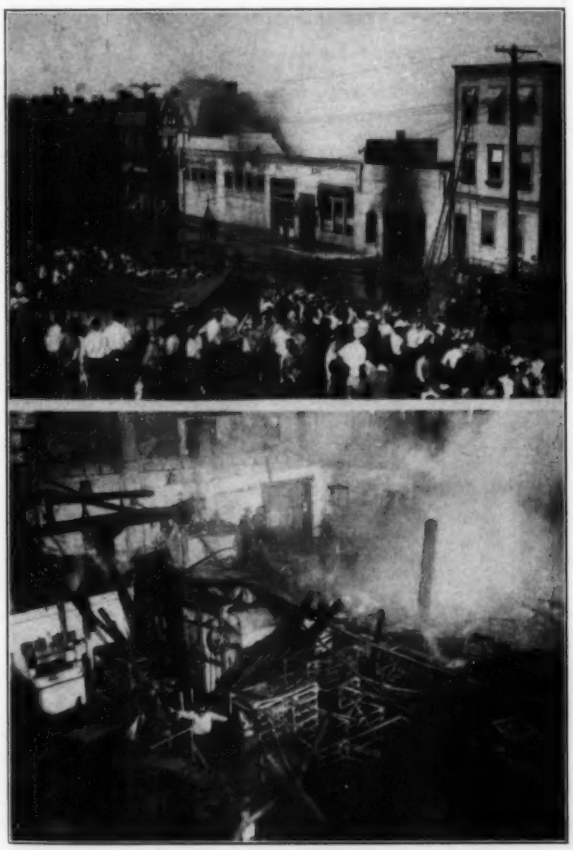
AS the result of a delayed alarm, the Duquesne Baking Company's building, located in Pittsburgh, Pa., and its contents were completely destroyed on the afternoon of September 10, and before the blaze was under control, flames had spread to adjoining buildings.

Twenty-five employees were at work in the one-story brick baking plant, located on Auburn Street, and extending through the block to Tyler Way, in the East Liberty manufacturing and residential district of the city. An explosion took place from some unknown cause, following the discovery of the fire in the rear end of the shipping department and wagon shed, a one-story frame structure adjoining the main building of the baking plant.

So rapidly did the flames spread, following the explosion, that the employees of the plant barely had time to reach the street, without being trapped in the building by the flames.

Upon the arrival of Engine Companies Nos. 8 and 16 and Truck Company No. 8, answering the first alarm from Station 55, at 3:06 p. m., in command of Battalion Chief Fred S. Beckett of the Fourth Battalion, the building of the baking plant was practically a roaring furnace. Flames were spurting out of all the windows and doors in the structure and through the roof, and rapidly spread to adjoining structures. A three-story frame dwelling house was already in flames.

Chief Beckett, upon his arrival at the fire, realized that he had more than a one-alarm fire on his hands. He immediately sent in the three-two (second and third alarm) at 3:12 p.m. calling Engine Companies Nos. 16, 29, 28 and 26 and Truck Company No. 38 and Deputy Chief Frank G. Jones, in command of the Fire Department in the absence of Chief Richard L. Smith, who was then attending the Convention of the International Association of Fire Chiefs at Winnipeg, Manitoba. The second and third alarms were quickly followed by the fourth alarm at 3:16 p.m., which was answered by Engine Companies Nos. 6 and 61. Chief Jones, upon his arrival, took personal charge of the fire fighting and he was assisted by Battalion Chief Beckett. The firemen, after a hard battle for two hours, succeeded in getting the fire under control and stopping further spread of the flames.



Two Views of the Baking Plant Fire

Upper—General view of the plant from the outside and lower, the interior of the Duquesne Baking Company, after the fire.

The sales manager of the baking company, told police and firemen, that he had discovered a small fire burning in one of the rear corners of the shipping room and wagon shed. He said he ran for a fire extinguisher and attempted to put out the flames, when an explosion took place which hurled him to his knees. Regaining his feet, he ran from the building and called the police and fire departments by telephone. Engine Company No. 8 and Truck Company No. 8, were just leaving their quarters in answer to a still alarm for the fire, when the first round from Station 655 was coming in on the house gong.

The driver of a delivery truck who had just delivered two car loads of flour to the bakery, stated he was driving his truck out from the loading platform of the baking plant, when he discovered the small fire burning at the end of the wagon shed, and before he could reach the street with his truck, the explosion took place and the bakery immediately burst into flames.

Twelve pumper streams and three hydrant streams were used, with 500 feet of three-inch hose, 6,650 feet of 2½-inch and 400 feet of one inch lead line hose, all cotton rubber lined, and 310 feet of ladders.

Ten pieces of motor apparatus, consisting of one 1000-gallon gasoline pumper, five 750-gallon pumpers, one deluge combination hose, turret and water tower wagon, one combination hose and chemical wagon, one city service hook and ladder truck and one 75-foot, four-wheel tractor drawn aerial truck, all of the American-LaFrance type, answered the four alarms of fire. Forty-seven men, including eleven officers, responded. The fire burned for 5½ hours.

The total loss on the baking plant structure and contents, amounted to $78,268, while the estimated total loss on the adjoining dwelling houses and contents was placed at $9,000.

NEW YORK FIRE DEPARTMENT HAS DIFFICULT GARAGE FIRE

Concrete Floor Made It Hard to Reach Seat of Flames—Many Men Overcome By Large Volume of Fumes—Call Sent for Dr. Archer

By WM. JEROME DALY

TEN fire fighters were seriously affected, one of them almost fatally, in an eight-hour effort to reach and conquer an insignificant fire in the sub-cellar of a garage in East 92nd Street, New York City, on October 15. The incident is important and serious because of the fire prevention lesson it contains, both from the standpoint of building construction, garage plant maintenance and the human equation.

At this time a year ago, a new seven-story garage with space for 660 automobiles was erected on the site of the dismantled Ringler Brewery in the middle of the block between Second and Third Avenues and extending north to 91st Street. The brewery interests leased the real estate for twenty years to the 92nd Street Holding Corporation. It has a frontage of 150 feet on 92nd Street, and extends one hundred feet back where it is reduced to a twenty-five-foot width and this narrow strip extends one hundred feet seven inches through to 91st Street. The garage was opened for business December 1, 1929.

The sub-cellar of the old brewery (main building) contained scores of beer vats, some of them eighteen feet in diameter. These were not removed when the brewery was torn down and neither was a lot of refuse and building wreckage. The sub-cellar was divided by extra-heavy brick walls, arched at passageways, but the passageways were blocked with earth excavation and debris. Part of the sub-cellar was utilized for the location of six 500-gallon gasoline tanks, in conformity with the Fire Department's rule, viz; set twelve inches apart and encased in twelve inches of con-

crete, backed up by ten feet of fill consisting of rock, earth, etc.

Otherwise the sub-cellar was a blind nonentity, topped-off with a few feet of concrete to make a floor for the garage cellar, which flooring under the New York fire regulations must have no openings. Access to the enclosed area occupied by the six tanks is through a companionway from the front of the garage building, reached by an iron ladder from the sidewalk hatchway.

The Fire Department's responsibility in foundation construction is restricted to the location and character of encasement of the gasoline tanks. There were no violations recorded; the garage was licensed and doing a thriving business. It was insured and had no previous fires.

A few days prior to October 15, gasoline odors annoyed the lessees, the Badner Bros., who complained to the oil selling corporation which installed the gasoline plant. The latter being responsible by contract for the maintenance of its plant, engaged a contractor to survey and correct any complaint found with the gasoline system.

The sub-contractors worked for a few days. Their operations necessitated puncturing a hole in the floor of the garage cellar, which had the effect of ventilating the sub-cellar which was the evident source of complaint. What they accomplished is at the moment unascertained and beside the point, suffice it to record here that their work was done and in consequence a mason contractor, was engaged to patch the recesses around the gasoline pipes from the sub-cellar, and also to fill in and concrete the aperture made in the cellar floor by the previous workmen.

Gasoline fumes were so distressing to Cimo while at work that he procured an electric fan to ventilate the area. Toward evening, 5:20 to be exact, when he was ready to quit for the day, there was an explosion and Cimo was badly burned about the face, hands and head.

The flash occurred near the hole in the cellar floor which he was filling at the time. Fire shot out of the pipe recesses. A telephone call to the Fire Department at 5:22 o'clock brought Engine Co. 22, H. L. Co. 13 and Acting Chief Hayes of the 10th Battalion. Somebody pulled the street box, bringing Deputy Chief B. F. Carlock, of the 4th Division, with a full assignment. By this time, the garage employees with a house line had extinguished the flames around the pipe recesses, while Cimo was being rushed off to a hospital. All but one engine and truck company were dismissed.

Smoke, fumes and gases permeated the garage cellar. No fire was apparent. It was evident however that something in the sub-cellar was burning without proper combustion. The problem was to reach it and "kill" it. The companionway from the sidewalk, via iron ladder, could not be negotiated without masks, consequently Rescue Co. No. 1 was special called at 6:22 p.m.

Capt. Cornell M. Garety and his men reconnoitered as far as the limitations of the confined area of the gas tank locations would permit, but there was no fire there. The fumes, pungent smoke and gases persisted, however. The men were spelling-off in relays, such was the concentration. More relief was called at 7:13 p.m.—H. & L. Co. 22. Officers decided to penetrate the concrete floor of the cellar to gain access to the sub-cellar. To do this, a compressor on an emergency truck was requisitioned from the Consolidated Gas Company. Pneumatic drills of the gas corporation soon began to bore through the thick flooring of the cellar.

Three large punctures were made, each big enough to admit a man. Ladders were dropped into the improvised man-holes, but the fumes, smoke and gases were unbearable. Special call for H. L. Co. 26 for more men was sounded at 10:47 o'clock. Men went below, but could not locate any fire.

The dungeon, with its uneven surface and brick walls was impenetrable. The three openings made by the gas company's pneumatic drills were well spaced, but each one led to nowhere, as far as subduing the source of fumes and gases. The men were groggy; the fumes continued, so did the carbon monoxide. An open sewer running through the sub-cellar floor defeated any attempt to flood the sub-cellar.

At 11:15 o'clock, Deputy Chief John J. McElligott, in charge of the operations of the department that day, arrived, and upon observing the condition of the men, immediately summoned the Department Ambulance with Dr. Harry M. Archer. Chief McElligott went below. Streams from cellar pipes were temporarily shut off. No human being could live there long.

The three openings in the cellar floor gave vent to the fumes in the sub-cellar, but this also gave the fire fighters a terrible affliction. Engine Co. 91 was special-called at 12:54 a.m. to give further relief. The battle waged unceasingly with men teaming-up in relays and cellar pipes doing their best.

Dr. Archer had plenty to do, the most precarious case being that of Batt. Chief Michael F. Ruddy, of the 10th, who came on duty at six o'clock. Poisonous gases made Chief Ruddy maniacal. He had tenaciously hung close to the job and declined proffered relief. At about two o'clock (eight hours of incessant work) he collapsed completely, and for an hour Dr. Archer administered artificial respiration with the aid of an inhalator. At one stage of his condition, Chief Ruddy did not breathe for a half-minute. Dr. Archer was apprehensive lest he "lose" his patient, but he rallied. Chief Ruddy, a brother of the internationally known swimmer "Joe" Ruddy, of the N. Y. A. C., had not had a sick leave for eighteen years. He has been 31 years in the service. Nine other fire fighters were affected but none so badly as Chief Ruddy. He returned to duty October 17th at 9 a.m.

About three o'clock on the morning of the 16th, the fumes were spent, and the smoke and gases had subsided. It was evident then that the firemen had at last won the fight.

Assistant Fire Marshal Martin Scott made an investigation, as a result of which he arrived at the following theory: "A spark from the contractor's electric fan caused the explosion." It is thought that this resulted in firing the sub-cellar strewn with refuse, junk and debris, which in all probability was impregnated with the normal amount of gasoline seepage to be found in the cellar of almost any garage, no matter how prudent the management might be.

WHAT'S BURNING

THE following list includes fires of $25,000 loss and over in the United States and Canada, for the periods designated in the headings. These figures, compiled from telegraphic reports, are based on estimates made at the time, and are subject to later investigation and consequent revision. Taken as a whole, however, they give an approximately correct view of the losses incurred. The figures represent loss in thousands of dollars.

Week Ending October 17	Loss in Thousands of Dollars
MAGDELENA, N. M.—Business Property of Geo. Goze	40
MEMPHIS, TENN.—Plant of Battery Parts Mfg. Co.	30
JASPER, ALA.—Mill of Arthur Lumber Co.	45
MARIETTA, GA.—Cole Apartments, Church St.	25
CARNEGIE, PA.—Bldg. of Loyal Burner Mfg. Co.	65
ENSLEY, ALA.—Plant of Birmingham Slag Co.	50
MARIANNA, ARK.—Bldg. of W. G. Hoyle Wholesale Co.	35
BATAVIA, N. Y.—U. S. Mail car and contents	65
PHELPS, WIS.—Main bldg. of Twin Lakes Lodge	25
MINTO, MAN., CANADA.—Entire business section	35
CAMPBELL'S POINT, N. Y.—Lakeside Country Club	25
COOK, IND.—St. Martin's Catholic Church destroyed	65
FRANKFORT, IND.—Warehouse of Kemp Brothers	80
ORESTES, IND.—Plant of Orestes Canning Co.	25
BAKERSFIELD, CAL.—Whse. of San Joaquin Grain Co.	35
EUROPA, MISS.—Webster County Agricultural High School	35
CAMBRIDGE, MASS.—Valley Milling Co. plant, adj. property	80

Week Ending October 24	
FOSTORIA, OHIO—Elevator of Fostoria Milling Co.	80
WINNECONNE, WIS.—Suhl Hotel destroyed	25
PRENTISS, MISS.—Store of S. S. Dale & Sons destroyed	40
HOMOSSASSA, FLA.—Kolb apartment house destroyed	35
COLUMBUS, IND.—Home of Ben Perry, several mi. north	25
HONEY CREEK, WIS.—Dairy Barn of A. W. Marks	25
MOUNT HOLLY, N. J.—Several business establishments	40
TOOELE, UTAH—Garage owned by O. P. Barrus destroyed	40
CENTRALIA, ILL.—Several business establishments	400
BREEZY POINT, IOWA—O. D. Collis apt. bldg.	40
KINSMAN, OHIO—Two business blocks destroyed	35
ARNPRIOR, ONT.—Walker store, adj. property	40
HAMMOND, IND.—Morris Hotel, V. Georgovich, Prop.	35
FALCONER, N. Y.—Plant of Warren Ross Lumber Co.	55
PITTSFORD, N. Y.—Irondequoit Country Club, destroyed	65
FAIR HAVEN HEIGHTS, CONN.—Pilgrim Congregational Church	125
EDISON, NEB.—Several business establishments	30
VALLEY VIEW, TEX.—Property of Webb Gin Co.	25
PARKDALE, N. S.—Plant of Tarbanite Products Ltd.	25
GALVA, KAN.—Six business buildings destroyed	50
HOQUIAM, WASH.—Cannery of Pacific Sea Food Co.	45
PEORIA, ILL.—Palace Garden, roadhouse, 4 mi. west	40
TORONTO, ONT.—Bldg. occupied by Magic White Co.	30
GOLDSBORO, N. C.—Lloyd Hinson Bakery Damaged	25
WRAYSWOOD, GA.—Watson Springs Hotel destroyed	60
ATLANTA, GA.—Home of C. H. Smith destroyed	25
GRAVELBOURG, SASK.—Chas. Tarnow Dept. store	25
CHALFONT, PA.—Mill property of F. D. Hartzell Sons Co.	80
SEVASTOPOL, WIS.—Catholic Church destroyed	25
FOSTORIA, OHIO—Plant of American Railway Signal Co.	25
NIVERVILLE, MAN.—Store of Niverville Trading Co.	30
YELLOWSTONE PARK, MONT.—Laundry at Mammoth Lodge	45
NEW YORK, N. Y.—Bldg. at 1913–2nd Ave., S. Sapiro, owner	250
N. ARLINGTON, N. J.—Home of Geo. Robertson	100
HOLSOPPLE, PA.—Apartment house owned by John Custer	25
N. MONTGOMERY, ALA.—Mill property of Coates Lumber Co.	200

Havre, Mont., Votes Down Ladder Purchase—The council of Havre, Mont., decided against the purchase of a ladder truck.

WESTCHESTER, N. Y., CHIEFS MEET WITH MUNICIPAL OFFICIALS

"Mayors' Night" Is Held as First Fall Meeting of this County Organization —Growth of Body—Large Attendance

THE first meeting for the fall season of the Fire Chiefs' Emergency Plan of Westchester County was held at the Kisco Lodge, Mt. Kisco, N. Y., on October 15 at 8:30 p.m., with President H. E. McTavey, Chief of Mt. Kisco, in the chair. Following the reading of the minutes of the last meeting—that of June 18—President McTavey, it being "Mayor's Night, called upon Mayor H. B. Blackeby, of Mt. Kisco, who welcomed the members in behalf of the town and Fire Department.

The Chair then called upon Ex-President George S. Towle, of Larchmont, who reviewed the history of the Plan and emphasized the fact that its sole excuse for existence was the need for systematic cooperation between the city and village fire departments of Westchester County in case of unusual emergency, such as a great conflagration. The object was to provide in advance certain information and to formulate a systematic plan of operation, so if when such an emergency arose, the various Fire Departments would be prepared to cope with it.

Chairman McTavey then announced the Chairmen of the various standing committees as follows:

Membership—Ex-Chief Lemmon.
Ways and Means—Chief Mulcahey.
Entertainment—Chief Steuhl.
Publicity—Lieut. Reviere.
Constitution and By-Laws—Chief Sullivan.
Civic Welfare—Chief Travers.
Educational—Chief Griffen.
Finance—Lieut. Reviere.
Organization—Chief Brennan.

Secretary Reviere showed in his report that the Plan now has a membership of 140 Chiefs and other fire department officers.

Chairman McTavey pointed out the need for close cooperation with the New York State Firemen's Association, the Hudson Valley Association and others. Captain Dawkins announced that a questionnaire would be sent to all Westchester Chiefs, asking full information as to the equipment of their Fire Departments and urged that all fill out the blanks as quickly as possible and return them.

On motion, it was decided to leave the matter of the dues of the Associate Members to the Plan's Board of Directors. Several of the city and village officials, of whom there were many present, addressed the members and made suggestions as to how the cooperation between the Plan and such officials could be made more effective.

Chief James J. Mulcahey, Recording Secretary of the I. A. F. C., gave an outline of the work accomplished at the late convention of the parent association.

The members were asked to stand for a minute of silence in memory of Ex-Chief Detlefs, of Mamaroneck, who died recently. Among the visiting officials present at the meeting were the following: Mayor H. P. Blackeley, Mt. Kisco; Fire Commissioner Skelly, Mt. Kisco; Mayor Smith, Ardsley; Trustee Walter Watkins, Larchmont; Mayor Berg, Mt. Vernon, and Attorney Ralph Gamble, Larchmont.

It was voted to accept the invitation of Chief Griffen, of White Plains, and meet in that city on November 19. Following the meeting refreshments were served by courtesy of Mayor Blackeby and Chief McTavey, of Mt. Kisco.

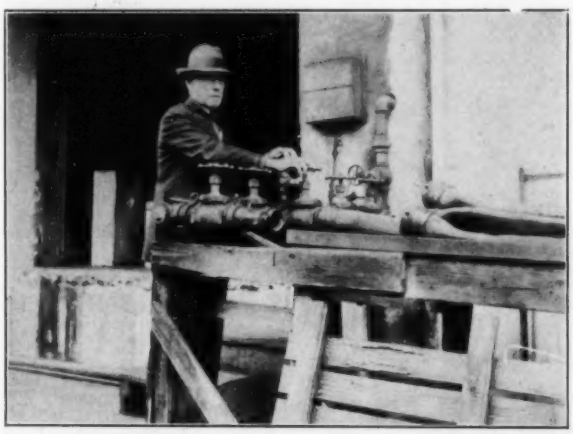
Railroads and Rangers Cooperate to Fight Forest Fires

The Southern Pacific Railroad Company has cooperated with the United States Forest Rangers in fighting forest fires in the West. An extensive system has been installed in the mountain regions of California. Ranger lookout stations are placed at advantageous points and are equipped with telephone communication so that the minute a fire develops, railroad officials are notified. A fire fighting equipped locomotive and train are sent out. It has been estimated that thousands of acres of timber are saved each year because of this excellent cooperation. The photographs shows a crew from the Southern Pacific Railroad demonstrating forest fire fighting methods.

How San Francisco Tests Hose

San Francisco requires all new hose to stand a test of four hundred pounds with safety, thus giving the firemen confidence in the hose when using the high pressure. New hose is required to stand a pressure of 1,300 lbs. before bursting.

All hose purchased by the San Francisco Fire Department is given three tests and if it stands all three tests it is accepted. These tests are the hydraulic test; the adhesive test and the tensile test.



Opening One of the Five Outlet Valves for Permitting Water to Flow Into a Length of Hose Being Tested

The hydraulic test requires the hose to be subjected to a hydraulic pressure of four hundred pounds. While under this test the hose must not leak, or sweat or break the threads of the cover, it must not contract in length and shall not increase its external diameter more than 1/16 of an inch at any point.

The hydraulic tests are made on specially constructed testing apparatus located at the Commissary and Repair Shops of the San Francisco Fire Department. The testing device has five outlets and by means of reducers, pipe from one to four and one-half inches in diameter are tested. Extending from the outlets are constructed tables fifty feet in length on which the hose length to be tested are laid. The testing device or manifold is connected by a triplex three-stroke hydraulic pump operated by an electric motor. A gauge is also provided to show the pressure. A by-pass is arranged to by-pass the water if desired.

San Francisco has one of the highest pressures of any city in the United States, the pressure being as high as 329 pounds when the valves are operated.

CHARLES W. GEIGER.

San Antonio May Move Fire Houses—San Antonio, Tex., is planning to move fire stations in Terrell Hills and Harlandale into the city limits. Architects and engineers have declared it feasible to move the buildings that were erected at a total cost of $50,000.

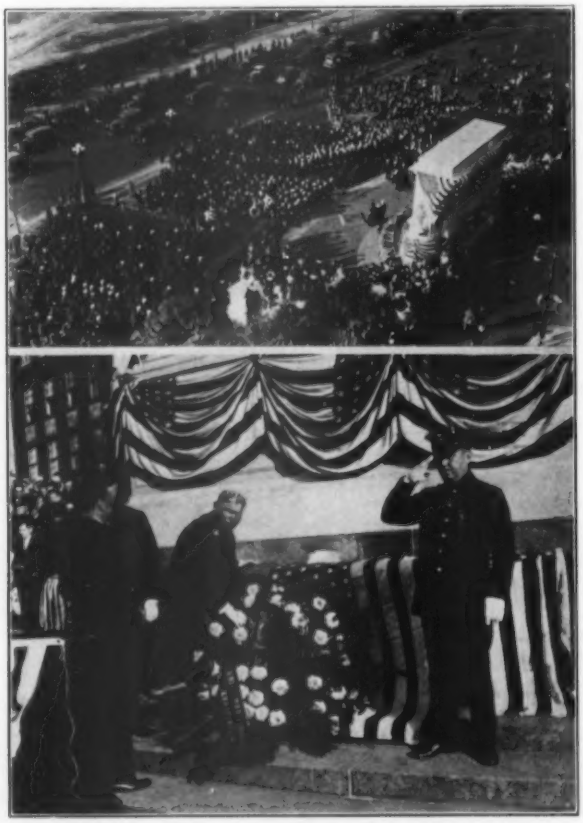
Atlanta, Ga., to Improve Fire Alarm—J. S. McGehee, who was appointed Fire Alarm Superintendent of Atlanta, Ga., is faced with the problem of modernizing the system that was installed fifteen years ago. The new Superintendent succeeds E. C. Pressley, who retires on pension, after twenty-eight years service with the department.

N. Y. Firemen Make Annual Pilgrimage

Firemen of New York City made their annual pilgrimage to the Firemen's Memorial Monument on Riverside Drive at 100th Street on Sunday Oct. 12th at the close of Fire Prevention Week where they held memorial services and paid homage to fifty-one departed comrades of whom thirteen died in the line of duty during the past year. Upward of 1,500 members of the department attended. Fire Commissioner John J. Dorman led the march to the site of the monument. Fire Chief John Kenlon was at the head of the uniformed force.

The monument, erected in 1913 is a tribute to both fire fighters and horses of other days. In bold relief three steeds are cut in the stone. They are drawing a steamer and as they are seen leaping through the air, only one hoof of the twelve hoofs is on the ground. The sculptor did his work from a photograph of Engine Co. 83.

Four fire chaplains of three different denominations participated in an undenominational service which embraced the National Anthem, an invocation, a hymn "Lead Kindly Light," reading of Holy Scripture, a hymn "Nearer My God To Thee" and another "Rock of Ages." Fire Chief John Kenlon placed a wreath at the base of the monument. This wreath is supplied annually by the Uniformed Firemen's Association. Fire Commissioner Dorman made the principal address. Fireman William Gunzel, Department cornetist, sounded taps.



New York Firemen Honor Their Deceased Comrades

Upper—A general view of the exercises held at the Firemen's Memorial Monument on Riverside Drive at 100th Street. Lower—Chief Kenlon places the wreath presented by the Uniformed Firemen's Association. At the right is Vincent J. Kane, president of the Association.

Commissioner Dorman said in part: "No words of mine can add to their glory. They need no mouthpiece to broadcast their heroic deeds. The records of their splendid accomplishments are written indelibly on the tablets of our memories. Their glorious names are enshrined in our hearts. In all humility we bow our heads in acknowledgment of their greatness."

W. Pittsfield to Form Fire Department—A fire department is to be formed in West Pittsfield, Mass.

CORRESPONDENCE

Exhibitors at Volunteer Gatherings

To the Editor:

Having had an intimate insight of the operations of the largest volunteer firemen's convention convening in this section, I am able to make some remarks of interest to manufacturers of fire protection equipment, as a result of this study.

It is my understanding that the larger manufacturers do not desire to have commercial exhibits at volunteer meetings for they feel that the volunteer chief does not last long enough in office to be effective as a purchasing agent.

Granting the truth of that statement, I, however, feel that it would be good business to have these volunteer officers and their prospective successors fully informed regarding equipment being marketed. The volunteers are gradually improving and the officers today are generally more alert and intelligent than formerly. One must not lose sight of the fact that often the members of the Council and the mayor are members of the department and attend firemen's conventions.

Furthermore, the rank and file of the volunteer organizations are strong enough as a group to assert themselves. There have been several instances of volunteer outfits selling their favorite truck to the Council, and only recently one volunteer department raised such a fuss over the Board's selection that the contract was cancelled.

When planning the recent convention of the Firemen's Association of the State of New York, the local committee tried to arrange an exhibit of fire equipment and apparatus, and while some of the firms were willing, there were not enough to make it worth while. I, therefore, maintained a small exhibit for the various houses I represent. The interest shown makes me feel that a regular exhibit would be profitable.

Yours very truly,

WM. PAUL BABCOCK

N. Y. Seeks Age Limit Law

A bill to amend the New York City Charter to make mandatory the retirement at sixty-five years of age of all members of the uniformed force of the Fire Department was introduced in the Board of Aldermen Branch of the Municipal Assembly on Tuesday and referred to the Committee on Local Laws.

The bill provides under the sub-division of duties of the Fire Commissioner that:

"The Fire Commissioner shall retire from all service . . . any officer or member of the uniformed fire force other than honorably discharged soldiers or sailors of the Mexican or Civil Wars, who shall have reached the age of sixty-five years on not less than one-half or full compensation . . . "

The bill was referred to the Committee on Local Laws. The bill provides that when enacted, it shall take effect in accordance with Section 16 of the Local Laws, which means that forty-five days must elapse to permit objectors or others to file information for or against.

The bill if enacted into law, will affect Fire Chief John Kenlon, who will be seventy-one years of age in January, and it will affect five of the Deputy Chiefs of Department, also about eight battalion chiefs, approximately twenty captains and twenty-five lieutenants.

This is the first time that a mandatory age retirement bill was introduced in the Board of Aldermen.

A previous bill introduced several years ago sought to give the Fire Commissioner discretionary powers to retire members of the department at sixty-two years of age. Objection to this was predicated on the permissive instead of the mandatory features, Chief Kenlon himself claiming that it gave the Fire Commissioner the discretion to play politics by allowing those senior members to remain in service who were politically favored while ousting those who were not politically "in right." The bill died in committee.

The present bill has been threatened for some time. It has been advocated principally by the younger men on civil service eligible lists seeking promotion, whose claims were based on the premise that their progress in the service was being retarded.

WM. JEROME DALY

Whiteland, Ind., Orders Apparatus—Whiteland, Ind., has placed an order for fire apparatus which is to be delivered about January 1.

The Round Table

(*Continued from page* 928)

not worn much, we feel that three years is long enough to keep them on the trucks.

Two years ago we received $25 each for our 36 x 6 inch tires and last year received $20 for our 38 x 7 and 40 x 8-inch tires.

August G. Derra, Chief, Schenectady, N. Y.: Pneumatic tires should not be kept in service more than two years although we have some that have been in use double that time and are still in good condition. I believe it depends a great deal on how much they are used.

Our department mechanics keep a record of changes of tires. A tire record is also incorporated in the report of the captain.

Old tires are traded in to junk men and as we cannot sell them without action by the board of aldermen, we accept their equivalent in polishing cloth.

Daniel F. Donovan, Chief, Kansas City, Mo.: Our experience has taught us that the life of a pneumatic tire varies, according to the miles traveled and the district in which used. I believe, however, that such are not safe for fire duty after three years service.

A complete record is kept from the day purchased, installed and to the date discarded.

Old tires are disposed of to the best of our advantage.

Ed. C. Rumsey, Chief, Detroit, Mich.: Pneumatic tires are kept in service until they show signs of weakness such as deep cuts, rim cuts, bulges, or tread worn through breaker strip. Tires are inspected once each month by an inspector from the Apparatus Bureau.

We only keep records of when tires are put on and taken off. Mileage does not enter into it. Tires are scrapped when taken from apparatus.

E. I. Kingsley, Chief, Aberdeen, S. Dak.: Tires should be readjusted every six months. We try to keep a complete record of our tires.

After two years of service we trade in our tires for new ones while the exchange value is good.

Ross B. Davis, Chief, Philadelphia, Pa.: I do not favor pneumatic tires for use on fire apparatus. A first class cushion tire in my judgment is the safest tire to be used.

M. N. Cleveland, Chief, Sanford, Fla.: Tires on fire apparatus should be changed at least every two years where they are not in constant use. If they undergo heavy service, they should be changed according to the wear upon the tires.

Our tire record includes date of purchase, price paid, and other items of interest covering life of tire. Old tires are traded in for new ones with discount.

John C. Heney, Chief, Barre, Vt.: I change the tires on my trucks every four years, and every two years on chief's car.

I get a good allowance for old tires through our dealer who resells them.

F. C. Brown, Chief, Fairbury, Neb.: We have set no definite length of time a pneumatic tire may remain on fire apparatus, but depend on the condition of the tire to determine this.

No record is kept of tires, and we trade them in while their exchange value is still good. The condition of the rubber is watched closely and are taken out of service as soon as they show considerable wear.

C. A. Wolverton, Chief, Port Angeles, Wash.: I believe that pneumatic tires should not be kept on fire apparatus more than four years.

As we have but two trucks, it is very easy to keep track of our tires, although we do keep a record of their air pressure and tire changes.

As a general rule we trade in our old tires when purchasing new ones.

Guy Giddings, Chief, Hastings, Mich.: We purchase new tires every two years, and trade in the old ones before they become too worn.

A. H. Lankford, Chief, Glendale, Cal.: Pneumatic tires should not be kept on fire trucks more than three years. Our records cover age of tire only. Old tires are sold for use on commercial trucks.

G. E. Renken, Chief, Laredo, Tex.: We replace fire truck tires every four or four and one-half years, as this is about the limit of their usefulness for fire department use.

Our tire record includes date of purchase, and findings of yearly examinations. Once a year all tires are removed and examined for rim cuts, etc., and to paint the rims.

Old tires are turned over to the street department as they prove quite satisfactory, one set being in service for 14 months at the present writing.

J. F. Simpson, Chief, Sunbury, Pa.: We have never kept any record of tires in the fire department service, but I have known some tires to be in service for as long as eight years. Old tires are sold to second hand dealers.

W. B. Laird, Chief, Monessen, Pa.: Pneumatic tires should not be kept in service more than five years; even though they may appear to be in good condition, the rubber has deteriorated considerably in this time.

Our tire record includes mileage and general examination results. Old tires are traded in at the time when new ones are purchased.

A. G. Dolby, Chief, Oil City, Pa.: Tires on fire apparatus should not be kept in service more than three or four years.

The only record kept of such tires is date of purchase. Old tires are turned over to the street department and they generally get a lot of wear out of them.

Wm. J. Greegan, Chief, Rochester, N. Y.: We have no definite period to constitute the life of fire apparatus tires. When they show signs of wear, they are changed, the old ones being sent to the storehouse.

Geo. A. Wood, Chief, Niagara Falls, N. Y.: Fire apparatus tires should be changed every five years.

Our records include date of purchase and mileage. Old tires are traded in on purchase of new ones.

W. F. Woods, Chief, Portsmouth, N. H.: In my opinion six or seven years service can be obtained from pneumatic tires on fire apparatus. The only data kept on tires is the age.

Nelson P. Jensen, Chief, Austin, Minn.: Tires can remain on fire trucks from three to four years without changing. The length of time each particular tire is kept in service is the only record kept of our tires. Old tires are traded in before they become too old or worn.

Jack Ary, Chief, Drumright, Okla.: Pneumatic tires on fire apparatus should be changed at least every three years.

The only record kept by our department is that of age and mileage. Old tires are either traded in on the purchase of new tires or sold to truck contractors.

* * *

ANSWERS TO PREVIOUS QUESTIONS

The following replies were received in answer to the question on whether or not it is good practice to run apparatus motors in fire houses as a test that apparatus is in proper operating condition?

F. Dubois, Chief, Kenora, Ont.: I would like to propose an idea that I have followed out very satisfactory in connection with the above question. One of the drivers on duty on the night shift starts the engine going at nine o'clock and runs it for about two minutes. He examines the engine while it is running as well as the gasoline feed lines and sediment cup, then moves the truck back and forward on the apparatus floor to limber it up as it were and changes the position where it sat before he ran it. I figure that it is good policy not to leave the tires sitting in the same position too long, and moving the truck gives the engine something to do and moves all parts where lubricating is involved.

While every one is entitled to their own opinion, I feel that a fire truck cannot be checked over any too often in this manner if it is expected to leave the floor to answer fire calls. Limbering up is followed by race horses, sprinters, swimmers, and least but not last, baseball pitchers. If Mr. Pitcher did not warm up just before he entered the pitchers box, he might very quickly find himself in trouble. Do not our motor trucks deserve some special attention before hitting the road to get to the scene of a fire quickly? Of course, no one meddles with the truck at any time except examining same after returning from a call or when trouble is cropping up. My experience in this matter has brought out several very important items. If we had not taken these precautions I am sure that the trouble that we found developing would not have allowed us to leave the floor or injury would have resulted had not the defect been discovered and remedied before it was too late.

Robert C. Howe, Chief, Fort Bragg, Cal.: Yes, I believe it a good plan to run motors of fire apparatus in fire houses especially where fires are few and far between.

Engines should be run daily, and this is the practice we follow, running it for about five minutes with the engine house doors open. Gas, oil and radiator water are inspected daily.

Form 8

CORVALLIS FIRE DEPARTMENT

BUREAU OF FIRE PREVENTION

INDIVIDUAL RECORD CARD

Name .....

DATE	LOCATION	Owner or Occupant	CAUSE	BUILDING				CONTENTS				REMARKS
				Value	Insurance	Loss	Ins. Paid	Value	Insurance	Loss	Ins. Paid	

Fig. 3—Individual Record Card of the Corvallis Fire Prevention Bureau

Volunteer Fire Inspection System

(*Continued from page 924*)

of the owner of the building and a second card bearing the name of the occupant. (Fig. 3). Should the owner be the occupant of the building, then the entry is made only on one card.

On this card bearing the person's name we enter the date of the fire, the location, the valuations, insurance and losses involved. Even with a short period of only 12 years during which records were kept it is surprising how many persons are repeaters at having fires. By this card system we can tell at once those who persist in having fires and from the various causes of the fire can obtain a very good idea as to whether they are due to carelessness or intent.

No records were available prior to 1918 and those between that date and January 1, 1926, are only meager but since the latter date accurate records have been maintained. Even in this short period of time they bear out the fact that the majority of fires are among "repeaters."

This system is worked out so that a man may move to any part of the city but should he have a fire it will show up on his individual record card. A cross check taken from the fire record card, of the causes of his fires will give a very good lead as to whether they are due to carelessness or intent. Such facts as losses, insurance, point of origin, and causes all tend to assist greatly in formulating an opinion of him.

From the data collected we can furnish accurate information to the insurance companies, agents and the rating bureau so that they may use care and discretion in granting him insurance. Should this man move from Corvallis and locate in any other city we can furnish the Chief of that city with an accurate record of his past fires so that he may be guided in his dealings with him or his observations of the premises for causes of the fire. The data is readily available to the State Fire Marshal for any call he may have for an individual or building.

On the building card the various causes will show if there exist defective wiring, defective flues, unsafe heating plants or other conditions. It will show the extent of damage to the building on previous fires and their causes.

With this data of various fires by the same individual assembled it places the Fire Prevention Bureau in position to present these facts to the person. This will aid them in opening the subject of fire prevention and do some real fire prevention work based on facts which are closely related to the individual. It also serves the moral effects of letting the individual know that he is being watched and any fires in which he is involved will be recorded against him.

Inspection and Records

There was no real inspection system prior to the formation of the Fire Prevention Bureau. The Fire Marshal made the rounds of the business district once or twice a year and told owners and occupants to eliminate certain hazards. He had very little check as to whether this was done and on those which he did have, all depended on whether he had time to go back and see that the hazard was abated. A report blank was filled out when each inspection was made, but no provision for systematic filing was made. The department had no blanks of its own and used the State Fire Marshal's form. Inspections and follow-ups made by the State Fire Marshal through his field deputies were the only records maintained and they were in no systematic order.

To overcome the above conditions the following system of inspection was adopted. The present inspection blank

CORVALLIS FIRE DEPARTMENT
Bureau of Fire Prevention

INDIVIDUAL INSPECTION CARD

Name.....

Date of Inspection	Location of Premises Inspected	Owner or Occupant	Conditions	Inspector

Fig. 7—Individual Inspection Card

of the State Fire Marshal was continued in use for routine inspections as it was broad in scope and had a good outline to follow. An illustration of this blank in the revised form is shown herewith. (Fig. 4).

City Inspection Report

In addition to this blank a city form was adopted for the periodic annual or semi-annual inspection of public buildings. This contained a more detailed outline of points to be observed. The blank is double and one side punched and perforated to fit in the standard notebook. These blanks when completed after an inspection are turned in to the Fire Prevention Bureau for record. Either from these blanks or at the time of making the inspection a report of violations observed is made out and handed in. These are used as a guide for rechecking a building. (Fig. 5).

The violation reports form 1077 of the State Fire Marshal's office are also continued in use without copying over on the city forms. (Fig. 6).

Filing of Records

The filing system is much the same as the record cards. For each building their appears a folder containing all the inspection records for that building in order of dates made. A study of these reports will at once furnish an estimate of the building conditions. These folders are arranged by streets and numerically by building numbers, the same as the fire record and of the building.

In another file is a card showing the name of each individual who has been inspected. On this card is shown the date his property was inspected, the location, and whether he was the owner or occupant. An additional column is provided for remarks. Thus from this card an examination can be made of the inspection report of each place where the individual was located and a ready summary is available at once as to whether he is a cooperator or non-cooperator in fire prevention; whether he is careless in his surroundings or whether he is inclined to maintain fire hazards. This record serves the same purposes in furnishing information to our own department or to any other department on the activities, nature, and record of each individual and is of great assistance in furnishing a guide for the Fire Prevention Bureau in approaching him to gain his cooperation. It may also furnish a lead for investigation in case of a fire occurring on the premises. (Fig. 7).

Other Records

Other records maintained are a report of fire drills held in public schools and a report of firemen on theatre details; cuts of both blanks being shown herewith and which are self-explanatory. (Figs. 8 and 9).

Inspector's Notebook

At the outset it was very apparent that all blank forms of a similar nature should be of the same size or capable of being reduced to that size to enable them being carried in a convenient notebook. These report blanks are all punched so that they may be easily inserted and removed

CORVALLIS FIRE DEPARTMENT
Bureau of Fire Prevention
Inspection Report

Date.....193....
Location .....
Owner .....
Owner's address .....
Occupants and Purpose for which used:
.....
.....
.....
.....
.....
Construction ..... story ..... with / without basement
.....
Condition of building .....
Construction of roof .....
Condition of roof .....
Hazardous exposures .....
.....
Openings: Protected ..... Unprotected .....
Are any unprotected openings in violation of city ordinance?
..... If so, where? .....
.....
.....
Inside protection .....
Extinguishers: No., type and location .....
.....
.....
Do any need recharging? .....
.....
.....

Inside protection:
Inside standpipe and hose .....
.....
Outside standpipe .....
Inside fire alarm .....
Fire escapes, location and condition .....
.....
Light and Power: Electric ..... Gas .....
Location of switches .....
Location of gas meter .....
Location of outside gas shutoff .....
Wiring in conduit or open .....
Were fuses examined? .....
Were any found defective or over fused? Where? .....
.....
Gas connections .....
Vent pipes adequate .....
Condition of wiring .....
.....
.....
.....
Heating system: Proper protection around furnace or boiler
.....
Kind of system ..... fuel used .....
Condition of chimney .....
Chimney on ground or brackets .....
Condition of stove or furnace .....
Ashes: Kind of receptacle and where deposited .....
.....
.....
Rubbish: How disposed of.....
.....

Is there any accumulation of rubbish on premises.....
If so, where? .....
Oily rags? .....
Explosives, acids, volatile oils or high inflammable materials
.....
Location and amount .....
.....
.....
Stairways: Enclosed or open .....
Location .....
Condition of .....
Elevators .....
General conditions: .....
.....
.....
.....
.....
Hazardous Conditions .....
.....
.....
.....
.....
Suggestions for advanced study for fighting fire, and saving of life should fire occur on these premises—.....
No. of persons occupying building in daytime .....
At night .....
.....
.....
.....

Conditions affecting salvage operations .....
.....
.....
.....
.....
.....

RECOMMENDATIONS:

REMARKS:

Signed .....
Rank .....Co. No. .....
Inspector

Fig. 5—City Inspection Report
Four pages, folded in the order shown.

from the notebook. The present style of notebook was manufactured by Lieutenant Merryman of the Fire Prevention Bureau at a very reasonable price.

Cost of Installation

This item of course will vary depending on the size of the city and the extent to which the system is developed. The equipment consisting of desks, filing cabinets, typewriter, etc., has such a wide range in price, depending on the desires of the individual and the amount of money available, that no definite amount can be given. Much of the equipment in use in our department was donated or purchased second hand. This was necessary, as no funds were available for fire prevention work. The cost of the printing will of course depend on the quantity but this is offset to a large extent by quantity production being much cheaper in the long run than production in small quantities.

The present equipment complete now on hand in our Fire Prevention Bureau cost us $131.15 and it is hoped to secure the necessary funds amounting to $25 to complete the system in the near future, making the total cost of installation approximately $160.

CORVALLIS FIRE DEPARTMENT
Bureau of Fire Prevention
REPORT OF THEATRE DETAIL

Date ..... 19....
Reported .....M.
Left .....M.

Theatre .....
Were all approaches to exits clear? .....
Were exit lights lighted and in good order? .....
Were all fire appliances readily available and in good order? .....
Was ventilator in working order? .....
Was asbestos fire curtain tested prior to beginning of performance? .....
Were fire extinguishers in apparent good condition? .....
Any need recharging? .....
Were house hose lines and standpipes in working order and unobstructed? .....
Was electrian at switchboard during performance? .....
Were there any fire, candles, alcohol lamps or other dangerous appliances or apparatus used? If so of what nature? .....
.....
Condition of motion picture booth .....
.....
Were any people standing in aisles? .....
Were all aisles cleared of any obstructions? .....
Approximate number of people in audience .....
Names of firemen on duty: Rank:
....
....

Signed .....
Rank ..... Co.....
In charge of detail

(Note:—Report violations on reverse side)

Fig. 8—City Report of Theatre Detail

CORVALLIS FIRE DEPARTMENT
Bureau of Fire Prevention
REPORT OF SCHOOL FIRE DRILL

Date ..... 19....
School .....
Location .....
No. of rooms ..... pupils ..... teachers .....
Name of Principal .....
Time required to empty building.....min.....sec.....
Discipline .....
Were all halls and passage ways clear? .....
Were all exit doors and fire escapes in good condition? .....
Condition of fire alarm .....
Is it plainly heard in all parts of the building? .....
Condition of extinguishers .....
Do any need recharging? .....
Condition of inside standpipe and hose .....
Condition heating plant and room .....
.....
.....
Deficiencies: .....
.....
Remarks:
(Note:—Make recommendations on reverse side)

Signed .....
Rank ..... Co.....
Inspector

Fig. 9—City Report of School Fire Drills

The present style of notebook was manufactured by Lieutenant Merryman of the Fire Prevention Bureau at a very reasonable price.

Periodic Inspection of City

There is one point on inspection which was not heretofore included, because I desired to make special mention of it in closing.

We have divided our city into 27 sub-districts, to each of which is assigned a fireman for building to building inspection. Twice each year these men cover their districts, inspecting every building. This method serves to bring home to the general public the fact that the Fire Department is interested in more than extinguishing fires. It is out to prevent fires. The first drive made brought results far more satisfactory than was anticipated.

Public Urged to Consult With Chief

Franklin H. Wentworth, of Boston, Managing Director of the National Fire Protection Association, was the speaker at a meeting of Maine fire chiefs held in Portland on Oct. 22.

His topic was "The Fire Chief's Responsibilities." He said in part:

"The fire chief should be an adviser of his people in all matters of fire safety. There is a great need for his counsel in the protection of the home. Business and industry are now pretty well trained in self-protection. The home, however, is just awakening. It needs the guidance of the fire chief, the man provided by the city for that purpose. The educational value of presidential proclamations, fire prevention week exercises, and the teaching of fire prevention in our schools, is stimulating our people to take steps to safeguard their homes, and here is where they need the Fire Chief's advice. He alone can protect them from the purchase of inadequate fire fighting devices. It is easy for people to be imposed upon in an unfamiliar field. The lightning-rod salesman was once the black beast of comic literature, the archtype of the faker; and yet lightning rods if properly made and installed have always afforded very real protection. The people could not tell the difference between a real and a fake lightning-rod in those days; and in these days they need equal guidance in the purchase of fire extinguishers.

"Many extinguishers are effective on certain kinds of fires only. Some will put out fires in oils and grease; some will not. The condition of the extinguisher and the amount of the extinguishing fluid are factors; also the method of applying or projecting the fluid. In this field it is easy for an inexperienced person to be deceived by a false sense of security. If a man desires to have something really effective to use in protecting his family from possible suffocation or fire death he will stand a better chance of success if he consults his fire chief before investing his money in these devices."

HARRY BELKNAP.

Waters, Ex-Chief of Philadelphia, Dead

Edward A. Waters, formerly chief of the Philadelphia Fire Department, died at his home in the Kensington District of the city on October 16 at the age of eighty-one. Up to the time he resigned April 1, 1913, he had served thirty-nine years in the service.

He was born January 28, 1849. At the outbreak of the Civil War he joined the Navy. On April 1, 1874 he was appointed as a substitute hoseman and one year later became ladderman. On August 17, 1893 he was put in command of the first fire beat in the city. Waters became district chief in 1896, assistant chief engineer on January 20, 1897 and chief engineer of the Bureau of Fire, March 1, 1911.

Records show that he was injured forty-one times in line of duty. He is survived by a daughter and a son.

EDWARD H. SPRANGERS.

Milwaukee Sells Two Old Stations—Milwaukee has ordered the sale of two of its old fire stations that have been abandoned.

Greenville, Ohio, to Purchase Pumper—Greenville, Ohio, has opened bids for a pumper for which a $14,000 bond issue was floated.

Department Not Supported by Taxes—The Fire Department at Delavan Lake, Wis., is not supported by taxation and yet it has four pieces of motor apparatus, a fire boat and a department consisting of twenty regular call men. It was organized following a fire in 1914 when eleven cottages were destroyed and two lives were lost. The first piece of apparatus was purchased in 1925, upon the advice of officers of the Chicago Fire Department.

FIRE DEPARTMENT ACTIVITIES

Chemical Car Delivered to Clastkanie, Ore.—A chemical car has been delivered to Clastkanie, Ore.

Pumper Delivered to Georgetown, Ky.—An Ahrens-Fox pumper has been delivered to Georgetown, Ky.

Apparatus Delivered to Pineville, La.—A Seagrave triple combination pumper has been delivered to Pineville, La.

Port Angeles, Wash., to Erect Fire House—A fire station will be erected in Port Angeles, Wash., for $24,000.

Madisonville, Tenn., to Purchase Apparatus—Madisonville, Tenn., has voted to purchase fire apparatus and to erect a fire station.

Negro Company Organized in Chicago—Fire Commissioner Goodrich of Chicago has designated Hook and Ladder No. 11 as a negro company.

Fonda, Ia., Purchases Rural Truck—Fonda, Ia., has purchased fire apparatus equipped with a 500-gallon pump for the protection of rural property.

West Bend, Wis., to Buy Pumper—West Bend, Ind., opened bids for the purchase of a new pumper of 500-gallon capacity, provided with an auxiliary tank.

Brentwood, Cal., Buys Pumper—A 500-gallon Seagrave pumper has been purchased by Brentwood, Cal. The Brentwood fire district was organized recently.

Mattoon, Ill., Provides Firemen's Pension—The city council of Mattoon, Ill., passed an ordinance for a firemen's pension fund providing for a one-fifth mill tax levy to support the fund.

Arlington, O., Awards Pumper Contract—Arlington, Ohio, has ordered a 600-gallon Seagrave pumper. The apparatus will be housed in the new municipal building now in the course of construction.

New Apparatus Purchase by Goshen, N. Y.—A new $12,500 pumper of 750 gallons capacity has been purchased by the Board of Trustees of Goshen, N. Y. The equipment is of the triple combination type.

Fireboat Urged for Gloucester, Mass.—A fireboat, additional men for the Fire Department and a new building code are some of the improvements for Gloucester, Mass., suggested by the National Fire Protection Association.

Feazell Chief of Nacogdoches, Tex.—Bud Feazell has been appointed Chief of the Fire Department in Nacogdoches, Tex. He succeeds Harwell Davis who resigned. The department consists of six paid firemen and fifteen volunteer firemen.

Louisiana to Have Fire College—Under the provision of the Cutrer act of the 1930 Louisiana state legislature, a sum of nearly $12,000 was appropriated for the establishment of a fire college. The location for the school has not been decided.

County Firemen Honor Chief J. N. Sullivan—A testimonial dinner was given to Chief Joseph N. Sullivan of Utica, N. Y., newly elected President of the International Association of Fire Chiefs, by the Madison County Volunteer Firemen's Association at Waterville, N. Y.

Washington, D. C., Retires Officers—Upon the recommendation of Chief George S. Watson, Washington, D. C., four captains, two lieutenants, a sergeant and four privates were retired. Entrance salary in the department is fixed at $1,900 a year with automatic yearly increases of $100 up to $2,400.

Roswell, N. M., Equipped With Gas Masks—Roswell, N. M., is being piped throughout the municipality for gas service, and as a precautionary measure, fire department apparatus is now equipped with gas masks and electric lanterns. The department is making preparations to build a three-story drill tower.

Village Can Not Purchase Apparatus Without Vote—According to Wilber M. Brucker, Attorney General of Michigan, a village can not buy fire apparatus on contract without a vote of electors, or it can not borrow money in excess of the amount provided for by law. The opinion was written in the case of the village of Bronson where fire apparatus was purchased on installments.

Modesto Fire Loss Less Than Reported—Under "What's Burning" in the October 1 issue, a loss of $125,000, one city block, and the Stanislaus Co., farmers warehouse fire of $100,000 was reported. According to Chief George E. Wallace, there was no city block destroyed in Modesto, Cal. Fire started in the warehouse and spread to a lumber yard—a total loss of $55,000.

Chief Healy Celebrates Anniversary—Scores of congratulations were received on September 26 by Chief John F. Healy, in charge of the Denver Fire Department, in recognition of his thirty-sixth anniversary as a member of the department. Five years after his appointment as a fireman, he was made a lieutenant, in 1900 captain, in 1903 assistant chief and on August 1, 1912, head of the department.

Chief Recalls Famous Fargo, N. D., Fire—Chief J. W. Sutherland, of Fargo, N. D., recalled the historical Fargo fire of 1893 at a luncheon meeting of the Lions Club during Fire Prevention Week. Chief Sutherland at that time was a member of the department. He explained that the fire spread rapidly because of the wooden sidewalks and that neighboring departments were unable to help due to a difference in hose thread measurements.

Film Operator Averts Theatre Panic—Through the quick thinking of a motion picture operator, a panic in a motion picture theatre in Petaluma, Cal., was prevented. As he was working on an idle machine, he heard the film break in the machine being operated. The film burst into flame. He shouted a warning to the audience to leave as orderly as possible and then attempted to fight the fire. Only equipment in the fireproof booth was damaged.

Spartanburg, S. C., Believes in Drills—Spartanburg, S. C., holds drills of ladder, chemical and hose evolutions four days of each week. Engineers of pumpers are drilled twice a month. The fire department also has what is termed a night school. Each man must know the location of all fire alarm boxes, all hydrants, the location and name of all streets, location of fire escapes on each building, location and operation of sprinkler systems in the buildings, and the location of the various equipment carried on fire apparatus. Night classes are held twice each week, on each platoon, and one general examination is given once each month.

Chief John C. Egner Retires

An eventful fire-fighting career was closed with the retirement of John C. Egner, head of the Fire Insurance Patrol in Kansas City, Mo., at the age of sixty-nine.

He came from Chicago in Kansas City in 1871 and while in his teens he joined a road show as acrobat. One off winter he used a mat at Station No. 6 on which to practice and Chief G. C. Hale saw him and offered him a job in the department as third-class fireman. In 1906 he was made head of the department and he held that job until March 28, 1918. Two days later Chief Egner became head of the Fire Insurance Patrol.

Chief John C. Egner

His most prized photograph is one showing the eight-man team of firemen which he captained in 1893 at the life saving contest arranged during the International Fire Congress in London. His team was awarded first prize. In 1900 he led a twelve-man crew to victory at the International Fire Congress in Paris. Each time his team competed with the best fire-fighting crews in the world, and each time a crew from Milan, Italy, was judged second.

He is succeeded by Chief Gardner, who has been a member of the Fire Patrol for twelve years.

PROPOSED IMPROVEMENTS

Olive, Calif.—A committee has been appointed by Olive Improvement Association to report on plan to purchase fire apparatus for the Olive, El Modena, West Orange and Villa Park section, according to reports.

Oroville, Calif.—City Council to consider plans and specifications of proposed new fire station at coming meeting.

Yreka, Calif.—City may consider purchase of a motor driven pumper and a hook and ladder truck according to U. F. Brown, City Clerk.

Knights Landing, Calif.—Board of Underwriters of Pacific Coast recommended the formation of a fire district including Knights Landing and bonded for about $20,000 for purchase of rural fire apparatus, according to reports.

Morris Cove, Conn.—A new combination chemical and ladder truck is to be purchased here, according to reports.

Westport, Conn.—Vigilant Hose Co. No. 3 is contemplating the erection of a new fire station, according to reports.

Buffalo, N. Y.—City Council to consider construction of new fire headquarters building in block bounded by Staats, Court and Seventh Streets. George W. Hedden, Fire Commissioner.

The Dalles, Oregon—If $16,000 bond issue is passed at the November election a pumper is to be purchased equipped with 1,000 feet of fire hose, service ladders, etc., also equipment for fighting oil fires, according to reports. E. Knebel, Chief of Fire Dept.

Pleasantville, N. J.—City Council purchased at Ahrens-Fox city service truck at cost of $11,000 for the fire department.

Position Wanted

Man acquainted with Fire Companies and Municipal Officials wants main or side line position. Now covering Southern New Jersey, Eastern Pa., Delaware and part of Maryland. Address: Box 305, c/o FIRE ENGINEERING, 24 W. 40th St., New York City.
10-1, 15, 29

Wanted
Sales Representatives

New York, Eastern Pennsylvania, New Jersey, Maryland, Delaware.

Qualifications: Experience selling municipalities, acquaintance with volunteer fire companies, car. Leading manufacturer of fire alarm equipment will pay salary and commission to worker. To receive consideration your application must outline in detail your qualifications for the work and past experience. Address replies to Box 320, c/o FIRE ENGINEERING, 24 W. 40th St., New York City.
10-29.

Wanted
State Representatives

For Arkansas, Louisiana and New Mexico. To sell Fire Trucks, Hose and Accessories on liberal commissions. Must have experience and be able to finance self. Write Southern Fire Apparatus Co., Republic Bank Bldg., Dallas, Texas.
10-29

Oil Fire Extinguished by Artificial Fog

Representatives of fire departments in Los Angeles County, Cal., witnessed a demonstration of a new device for extinguishing oil fires, at Sante Fe Springs, Cal. At the demonstration, an oil tank fire covering 180 square feet area was extinguished with three gallons of water in a short period of time.

The "Rapid" method consists of breaking up a solid stream of water into minute fog particles. In the process

Signaling That the Test Oil Fire is Completely Out

This tank was filled with 35 gravity crude oil and then set on fire. When the fog from the special valve hit the fire it turned into steam. Clouds of steam may be seen rising from the tank.

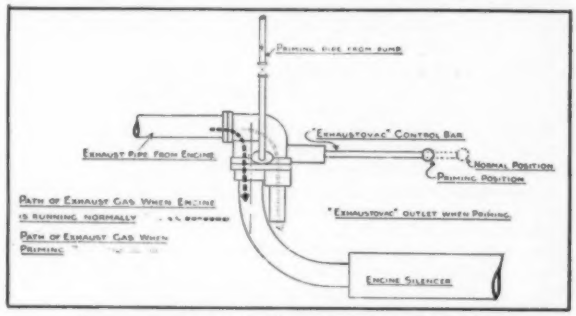
of absorbing heat from the fire, steam is generated in the space between the fire and the burning material, thus excluding the oxygen that is necessary to support combustion.

The fire chiefs attending the demonstration at Santa Fe Springs included Deputy Chief J. J. Davis, First Assistant County Fire Warden, Los Angeles County; Assistant Chief Norman C. Johnson, Los Angeles County Fire Department; Robert L. Dunlap, Chief of Fire Prevention, Los Angeles County; Battalion Chief A. Heizman, Los Angeles County Fire Department, and Captain Glenn C. Griswold, Los Angeles County Fire Department, Santa Fe Division.

Gas Exhaust Used to Prime Pump

An attachment for priming centrifugal pumps with the exhaust from gasoline motors used to operate the pump, is being marketed by Simonis, Ltd., of London, England.

The mechanism consists of a two-way valve. In running position, the exhaust gases pass in the ordinary way on to


PRIMING PIPE FROM PUMP
"EXHAUSTOVAC" CONTROL BAR
EXHAUST PIPE FROM ENGINE
NORMAL POSITION
PRIMING POSITION
PATH OF EXHAUST GAS WHEN ENGINE IS RUNNING NORMALLY
"EXHAUSTOVAC" OUTLET WHEN PRIMING
PATH OF EXHAUST GAS WHEN PRIMING
ENGINE SILENCER

Arrangement of "Exhaustovac" for Priming

the silencer or muffler. In the priming position, the gases are directed through an ejector which primes the pump and suction. The attachment operates entirely independent of the pump and it can, therefore, be put into action before the pump is placed in gear.

A Correction

To relieve a water shortage in Annapolis, Md., a 1,000-gallon American-LaFrance pumper that was placed in service several years ago was used to pump water into the city's reservoir from a nearby stream. The pumper operated continuously for 33 days and four hours, without a stop, and when the water shortage was relieved, the apparatus was driven back to headquarters, where after changing the oil and flushing out the cooling system, the pumper was placed back into fire department service. The story that appeared in the October 15 issue concerning this remarkable record had a heading "Pumper Works Steadily 33 Hours." It should have read "33 Days."

New Trade Literature Received

The following literature descriptive of up-to-date methods and equipment for fire departments, has just been issued for general distribution, and can be procured by writing to the concerns mentioned. Those desiring additional trade literature in which they are interested can use our regular "Information for Buyers" pages, listed in the Advertising Index.

Beckman-Dawson Roofing Co., New York, N. Y.—Eight-page illustrated booklet on Ced-A-Roc shingles.

Federal Electric Co., Chicago, Ill.—Booklet describing the Federal-Tyfon fire alarm system—eight pages, illustrated.

Garrison Fire Detecting Systems, New York, N. Y.—Technical Handbook No. 1 on the installation, inspection and maintenance of such systems.

CONVENTION DATES

November—SONOMA COUNTY FIREMEN'S ASSOCIATION. Annual Convention, Petaluma, Cal.

Nov. 15—KEYSTONE FIRE CHIEFS' ASSOCIATION. 29th Annual Convention, Lancaster, Pa. Charles O. Oyler, Convention Representative, 315 S 14th St., Harrisburg, Pa.

Nov. 19—FIRE CHIEFS' EMERGENCY PLAN OF WESTCHESTER COUNTY. Regular Meeting, Fire Headquarters, White Plains, N. Y. Secretary-Treasurer, E. Riviere, Fire Headquarters, Larchmont, N. Y.

May 11-16, 1931—NATIONAL FIRE PROTECTION ASSOCIATION. 35th Annual Meeting, Toronto, Ont., Can. Managing Director, Franklin H. Wentworth, 60 Batterymarch St., Boston, Mass.

May 21, 1931—IOWA STATE FIRE CHIEFS' ASSOCIATION. Annual Convention, Ames, Iowa. Secretary-Treasurer, Chief L. R. Morris, Ames, Ia.

July 13-16, 1931—MONTANA STATE FIREMEN'S ASSOCIATION. 40th Annual Convention, and Firemen's Short Course, Bozeman, Mont. Secretary-Treasurer, D. E. Moser, Bozeman.

Flare Used to Halt Traffic

An unusual but simple device has been developed by Chief Daniel B. Tierney, head of the Fire Department in Arlington, Mass., to establish a fire line until the time the local police arrive.

Illuminated Stop Signal

While Arlington is known for some of the most beautiful residences in metropolitan Boston, the highways are more or less crowded with automobiles night and day. Not long ago a large ice house took fire, illuminating the sky, and it attracted a large number of motorists.

Determined to prevent a recurrence of traffic congestion, such as then occurred, Chief Tierney constructed a pipe standard with a weighted base. The standard bears a sign with the word "Stop" painted in yellow on a black background. The rod from the sign fits into the pipe and may be set at any desired height by means of a set screw. Provision is made in the base to insert a red railroad flare. The light is provided with a friction cap and requires no matches to start it. Once started, the flare burns for thirty minutes and the sign may be seen 350 feet away.

The department service truck which responds to all alarms is provided with these signals. They are placed at all fires where it is necessary to stop traffic and serve as a means of holding back the cars until a regular police line can be established.

Chief Tierney demonstrated his device before a number of visiting fire and police chiefs.

Massachusetts Chiefs Hold Meeting

Governor Frank G. Allen, of Massachusetts, was a guest at the luncheon and meeting of the Fire Chiefs' Club of Massachusetts held on Oct. 15 in the Parker House in Boston.

The Governor made a short speech in which he declared that no body of men render a greater service to their communities than the heads of the fire departments.

John W. Reth, State Fire Marshal, told of his plans for "cutting red tape" and making regulations that would eliminate existing confusion. Senator Ollendorf, Chairman of the Governor's Committee for Revision of the Fire Laws and Ordinances, whose recommendations were recently adopted by the legislature, was also present and was seated at the head table with Chief Selden R. Allen, of Brookline, President of the club, and Secretary F. Burt Jaquith, ex-chief of Randolph. Chief Henry A. Fox, of Boston, and Russell H. Codman were also at the head table.

To fill the vacancy caused by the death of Chief Alfred L. Mead, of Quincy, Chief Frank E. Tracy, of Woburn, was elected First Vice-President of the club. Chief David A. DeCourcey, of Winchester, was elected Second Vice-President and Chief Frank F. Dickinson, of Brockton, was named as Sergeant-at-Arms, the position formerly held by Chief DeCourcey.

Chief Guy W. Richardson, of Dracut; Chief Henry A. Fox, of Boston; and Chief William J. Sands, of Quincy, were elected to active membership in the club and Harry J. Lovell, of the Mack Fire Apparatus Co., was elected as an associate member.

There was a large attendance of chiefs, this being made possible by a heavy rain which ended the forest fires that had been keeping most of the departments busy, especially in the smaller towns.

Oil burner and garage regulations were among the subjects discussed. The State Fire Marshal answered many questions that were put to him and declared that it was his intention to co-operate in every way with the Chiefs to aid their efforts for fire prevention.

HARRY BELKNAP.

Canton, O., to Erect Two Stations—Plans are being drawn for two new fire stations to be erected in Canton, Ohio. The council has appropriated $50,000 for the fire houses.

Cleveland Firemen Interested in Golf

Enthusiasm for golf has reached such a high pitch in Cleveland among members of the Fire Department that during the past winter the Cleveland Firemen's Golf Association was formed with Thomas F. McManamon, President and George E. Witty of Fire Station No. 1, Secretary-Treasurer.

Edwin D. Barry, Director of Public Safety, donated a silver trophy and George A. Wallace, 85-year old veteran Fire Chief, followed suit. When interviewed about golf, Chief Wallace said:

"I am not quite old enough for golf, but if a football team is organized, I will be a candidate for the position of fullback."

The association is composed of 250 members of the Fire Department. During the season of 1930 three tournaments were conducted, and even though many of the entrants have only been playing golf for a short time, the scores were remarkably low.

Officials of the Cleveland Fire Department have given their approval to the new organization. Practice nets are already appearing in the old lofts of many fire stations, and members are devoting spare moments to bettering their game.

McGehee in Charge of Atlanta Fire Alarm

J. S. McGehee, formerly sales engineer in the Atlanta, Ga., office of The Gamewell Company, has been placed in charge of the fire alarm system in Atlanta, Ga.

He has been with The Gamewell Company for the last eight years and has traveled extensively throughout the southeastern states. He is well known to the fire chiefs and fire alarm superintendents in that district.

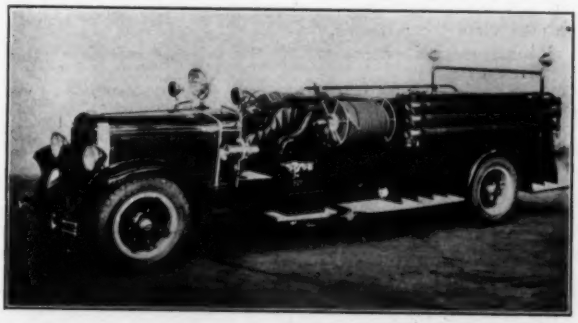
J. S. McGehee

100 Die in Mine Blast

Over one hundred persons were killed, eighty seriously injured and many more were hurt as the result of the explosion of a ton of dynamite in the No. 2 shaft of the Anacola mine at Alsdorf, Rhenish Prussia.

The rescuing squads, reinforced by Dutch and Belgian miners from neighboring mines, have little hope of rescuing the 150 men entombed alive. The men are imprisoned at a depth of 1,550 feet.

This is the second large German mine disaster within four months. The previous one at Neurode, Silesia, resulted in a death list of more than 150 persons.



Mack Adds Special Apparatus for Fighting Brush Fires

At the last convention of the Pacific Coast Chiefs, considerable interest was evoked in a special Mack fire apparatus designed for fighting brush fires that are so common in that section. It has the standard chassis and engine of the 500-gallon pumper. A two-stage centrifugal pump with a capacity of 150 gallons at 120 pounds pressure is used. The apparatus carries a water tank that runs the full length of the body. It is provided with a large manhole to facilitate cleaning. The tank may be removed without disturbing the chassis. Because it carries its own water supply, the pump may be operated even while moving along the road.

FIRE PREVENTION ORDINANCE FOR CITIES AND TOWNS

It Establishes Bureau of Fire Prevention—Prescribes Regulations for Hazardous Materials and Processes

(*Continued from last issue*)

THE following Fire Prevention Ordinance has been prepared by the Engineers of the National Board of Fire Underwriters and is recommended by that organization for adoption by cities and towns. While it is not expected that in all cases smaller cities will find need for an ordinance of such length, it is recommended by the Board that a complete set of regulations be adopted in all cases, for even though there may be no immediate need of regulation of a particular hazard, every growing community is sure to have these hazards introduced sooner or later, and it is better to be prepared for them than to develop unrestricted and then try to regulate them. The ordinance will be published in its entirety serially in FIRE ENGINEERING. *Following is a continuation of Part 8—Compressed Gas Systems Other than Acetylene for Lighting and Heating*:

807. *Cylinders.*

(a) Only approved cylinders which are acceptable for distribution in interstate commerce and marked to the effect that they comply with the Interstate Commerce Commission specifications and regulations (bearing test marks as prescribed in the Interstate Commerce Commission shipping specifications covering this class) shall be considered suitable for employment in any compressed system for house lighting and cooking.

(b) When cylinders are not in use, outlet valves shall be kept tightly closed even though cylinders may be considered empty.

(c) Cylinders, when exhausted, shall have the valves closed.

(d) Cylinders shall be protected against mechanical injury or tampering at all times.

Part 9. Flammable Liquids.

901. *Application to New and Existing Installations, Etc.*

This ordinance shall apply to all new plants, stores, equipments and installations; and, except as otherwise specified, to existing plants, stores, equipments, and installations which constitute a distinct hazard to adjoining property, in so far as the intent of the sections can be reasonably fulfilled. All persons and businesses storing, handling or using flammable liquids shall be governed by this ordinance whether or not specifically named in this ordinance.

902. *Classification of Flammable Liquids.*

For the purpose of this ordinance, flammable liquids are divided into three classes, according to the flash points, as follows:

Class I. Liquids with flash point below 25 degrees Fahrenheit (-4 degrees Centigrade) closed cup tester.

Class II. Liquids with flash point above that for Class I and below 70 degrees Fahrenheit (21 degrees Centigrade) closed cup tester.

Class III. Liquids with flash point above that for Class II and below 187 degrees Fahrenheit (86 degrees Centigrade) closed cup tester.

Representative examples of the classes of flammable liquids are:

Class I.	Class II.	Class III.
Ether	Alcohol	Kerosene
Gasoline	Amyl Acetate	Amyl Alcohol
Naptha	Toluol	Turpentine
Benzol	Ethyl Acetate	Fuel Oil
Collodion	Methyl Acetate	
Acetone		

903. *Manufactured Liquid Commodities Included.*

Any manufactured liquid or fluid commodity, such as paint, varnish, dryer, cleaning solution and polishing liquid which contains flammable liquids shall be considered a flammable liquid and shall be classified by Section 902 according to the flash point of the mixture.

904. *Permits Required.*

Except as specified in Section 905, a permit (which shall be for one or more of the following subdivisions) shall be obtained:

(a) For the storage of handling of a total quantity of Class I liquids in excess of one gallon in any dwelling, apartment house or tenement, and in excess of six gallons in any other building, and in excess of ten gallons outside of any building.

(b) For the storage or handling of a total quantity of Class II liquids in excess of five gallons in any dwelling, apartment house or tenement, and in excess of ten gallons in any other building, and in excess of twenty-five gallons outside of any building.

(c) For the storage or handling of a total quantity of Class III liquids in excess of twenty-five gallons inside any building, and in excess of fifty-five gallons outside of any building.

905. *Owner or Agent May Use Certain Flammable Liquids Without Permit.*

Unless a storage of quantities in excess of those given in Section 904 is to be maintained for at least thirty days, nothing in this ordinance shall require an owner or occupant or his agent to obtain a permit for the use of, nor does it prohibit the use by him, of paints, oils, varnishes and similar flammable mixtures.

906. *Permits for Different Occupations.*

All permits shall state the nature of the business of the applicant, the maximum quantity of each class of liquid to be kept, and the location of the storage. Permits shall be listed as follows:

Garage Permit (with or without storage)
Storage Permit
Retail Dealer's Permit
Painter's Permit
Paint and Oil Dealer's Permit
Jobber's Permit
Manufacturer's Permit
Dry Cleaner's Permit.

907. *Inspection Required Before Covering Installation.*

Before any installation is covered from sight, a notification in writing shall be given the Chief of the Bureau of Fire Prevention, who shall, within 48 hours after the receipt of such notification, inspect the installation and give his written approval or disapproval. Upon failure of the Chief of the Bureau of Fire Prevention to inspect within the specified time, the installation may be covered but shall be subject to inspection by the Chief of the Bureau of Fire Prevention at the expense of the City.

908. *Hazardous Heating and Lighting Appliances May Be Prohibited.*

The Chief of the Bureau of Fire Prevention may prohibit the use of any type, kind or make of heating or lighting appliance using flammable liquids which have not been tested by him or some competent authority, and found to be properly safeguarded.

909. *Class I and II Liquids Prohibited in Places of Public Assembly.*

No Class I nor Class II liquids shall be kept or stored in any schoolhouse, religious, amusement or other building used for public assembly, except in laboratories for experimental purposes.

910. *Storage of Class I and II Liquids Near Exits, Etc.*

Except in sealed containers, no Class I nor Class II liquids may be stored within 10 feet of any stairway, elevator or exit except when in a space separated from the stairway, elevator or exit by a fire-resistive partition.

911. *Two Exits Required in Stores and Jobber's Plants.*

In all stores and in all jobber's and manufacturing plants in which flammable liquids are stored, at least two exits shall be provided, one of which shall be remote from the point of storage.

912. *Handling Limited in Buildings Occupied by Families.*

The mixing, storing or handling of flammable liquids of Class I and II in open containers is prohibited in any store in any building housing more than two families or in a frame building housing more than one family, provided that this shall not apply to drug stores where flammable liquids are used in making and compounding medicines and prescriptions.

(*To be continued*)

Emergency Truck Delivered to Pennsburg, Pa.—A Mack emergency service fire apparatus has been delivered to Pennsburg, Pa. It is designed to carry hose, is equipped with chemicals, a 100-gallon booster tank with pump, fire aid service, poles, and other equipment.

Gamewell Opens Pittsburgh Office—A new sales and service office opened by the Gamewell Company at 1424 Park Building, Pittsburgh, Pa., "is now prepared to serve the fire alarm and police signal requirements of eastern Ohio municipalities," states an announcement just made by the company.

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FALSE ALARMS

POINT OF VIEW

Possibly from so much water in the station, what with drying hose and washing apparatus, little brown insects were often noticed. All kinds of insecticides were used to get rid of the pests.

Some of the men were going upstairs when an insect was discovered.

A man remarked, "You know, I never see one of those little creatures without wondering where it comes from."

"Not me," said another. "I never see one without wondering where it is going."

Along with the sailor who spends his shore leave rowing in Central Park is the mailman who goes for a walk on Sunday.

RAPID CHANGE

The Young America company had an unusual feast. After a few days in the woods, a member of the volunteer company came back with a deer that he had shot. A venison feast was arranged at the fire hall. All the boys were there, the city officials, and even some chiefs of nearby communities.

The Mayor was toastmaster.

"If I were you fellows I wouldn't eat too much of this stuff. Remember what happened to the chief last year. A week after he had gorged himself with this stuff, he became an Elk."

According to the celebrated team of Weber and Fields, New York City has the best judges that money can buy.

NOT APPRECIATED

Tiring of walking half a mile for their meals, the boys agreed to make their own meals—a change of cook to take place each week.

Having nothing else to do, the company members decided the most exciting thing possible would be to tease the cook-of-the-week. The fireman-cook could stand it no longer.

"A lot of appreciation I get. Here I cook for you fellows and what do I get for my work? Nothing."

"You're lucky," said one. "We get indigestion."

One trouble with living in an apartment house is that you can't tell whether it's steam coming up or another tenant banging for heat.

PROPERLY VALUED

An artist arrived at his studio one morning and found that during the night it had been ruined by fire. He at once telephoned to his insurance agent to come and estimate the damage.

An hour later the man arrived.

"Now, with regard to these canvases?" went on the agent. "You say they cost about $5 each?"

"About that."

"Were they just plain canvases?" asked the insurance man.

"No, I'd painted on most of them."

"Ah," said the agent thoughtfully. "Then supposing we say $2.50 each."

CHANGE OF STYLE

Gerrity, as a delegate to the coming state firemen's convention, was making plans to attend the gathering. He purchased many new things, and then deciding to be strictly modern, bought a pair of pyjamas. When the girl gave him his package, he asked rather timidly:

"Will you please tell me—do you wear these over or under the night shirt?"

One trouble with New York's public servants seems to be that the cleaning up has not been confined to the Street Cleaning Department.

MERELY A TRADE

There is always danger of being too good natured and of loaning fire department property to persons in the neighborhood. A colored fellow who was just called Sam and who came in now and then to do odd jobs, borrowed a pair of rubber boots. Several days passed and the boots were not returned. The one who loaned the boots spoke to Sam when next he called.

"Say, Sam, when you going to bring back those boots of mine?"

"Ah ain't got you-all boots, Boss. Ah dun traded dem foh a pair of mah own."

FIRST AND LAST

A smoker and boxing exhibition was arranged by the Fire Department. As a means of attracting local interest, the one in charge of arranging the bouts induced a member of the department to volunteer to give boxing exhibition. He was matched against a third-rate fighter but a professional, nevertheless.

The referee announced, "Kid Fire-Fighter wishes me to announce that this is his first appearance in any ring."

The professional ducked a wild swing and then jabbed in at an unprotected opening. The amateur was knocked out and the referee started counting.

At eight the dazed youth sat up and spoke in a husky whisper. The referee raised his hand for silence.

"Kid Fire-Fighter also desires to state that this is his last appearance in any ring."

THE ONLY REASON

"I can't see why they have a man to steer from the rear of the fire department's ladder truck?" said Mrs. Tellum during an afternoon tea.

"Well, it's a necessary thing, I suppose," replied Mrs. Backseat, "but I agree with you that it's not a man's work."

PROPERLY CLASSIFIED

A group of women returning home from the park were discussing the concert given by the fire department band, and especially the one who rendered a cornet solo.

"I'd say that he plays in a manner that is heavenly," gushed one admirer.

"I shouldn't say it is exactly heavenly," ventured another, "but I will at least admit that it was unearthly."

Drawing by "Art" Espey

Spinster: Young man, when you get an extra minute, would you mind spraying my bachelor buttons.

YOUR CATALOG PAGE

Fire Protection Equipment and Supplies

1 Acid Siphons.
2 Adaptors for Changing Hydrant Threads.
3 Acid Jars and Rings.
4 Aerial Ladders, Detachable.
5 Aerial Trucks.
6 Alarms, Siren, Electric.
7 Alarm Systems, Industrial.
8 Alarm Systems, Municipal Telegraphic.
9 Alarms, Thermostatic.
10 Asbestos Clothing.
11 Badges, Insignias, Buttons, etc.
12 Banners, Trumpets, etc.
13 Battery Jars.
14 Battery Zincs for Fire Alarm Batteries.
15 Bells, Fire Alarm, Municipal
16 Body Equipments.
17 Boxes, Gongs, Reels, Registers, Fire Alarm.
18 Brakes, Air.
19 Brake Linings.
20 Brooms, Fire.
21 Building Materials, Fire Retardant.
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23 Chains, Non-Skid Fire Apparatus.
24 Chassis for Fire Apparatus.
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31 Cutting & Welding Equipment, Electric.
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33 Door Openers, Fire Station, Automatic.
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35 Extinguishers, Carbon Dioxide.
36 Extinguishers, Soda-Acid.
37 Extinguishers, Carbon Tetrachloride.
38 Extinguishers, Foam.
39 Extinguishers, Powder.
40 Fire Boat Nozzle Equipment.
41 Fire Department Supplies, General.
42 Fire Exit Devices, Door Opening.
43 Fire Alarm Posts.
44 Fire Escapes, Portable.
45 Fire Escapes, Rigid.
46 First Aid Equipment.
47 Flare Lights.
48 Flashlights, Hand.
49 Foam Liquid for Extinguishers.
50 Gas Masks and Respirators.
51 Gas & Smoke Helmets.
52 Gasoline & Oil Handling Equipment.
53 Goggles, Firemen's.
54 Helmets, Metal, etc.
55 Hose Carts, Reels & Racks.
56 Hose Clamps.
57 Hose, Fire.
58 Hose, Chemical.
59 Hose Holders.
60 Hose Jackets.
61 Hose Standardization Tools.
62 Hydrant Draining Pumps.
63 Hydrants, Fire.
64 Jacks for Fire Trucks.
65 Jacks, Shoring & Prying.
66 Ladders, Fire.
67 Lightning Arresters.
68 Motorcycles, Fire Dept. Equipped.
69 Nets, Life.
70 Nozzles, Pipes & Misc. Brass Goods.
71 Packings, Pumps.
72 Pads, Pole Hole.
73 Paints, Fire Resisting.
74 Priming Ether, Motor.
75 Pumping Cars, Standard.
76 Pumping Cars, Foam.
77 Pumps, Fire Apparatus.
78 Pumps, Fire Service, Stationary.
79 Pumps, Portable for Fire Protection.
80 Record Books, Fire.
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82 Reviving Apparatus, Oxygen.
83 Rubber Clothing.
84 Salvage Covers.
85 Searchlights.
86 Shingles, Fire Retardant.
87 Shirts, Firemen's Special.
88 Sirens, Apparatus & Chiefs' Cars.
89 Sliding Poles.
90 Soda & Acid Chemicals.
91 Spark Plugs, Fire Apparatus & Motorcycles.
92 Squad and other Auxiliary Cars.
93 Sprinkler Head Shut-Offs.
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105 Uniforms.
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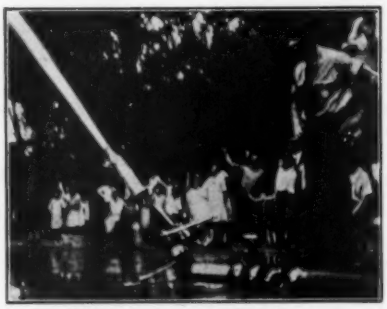

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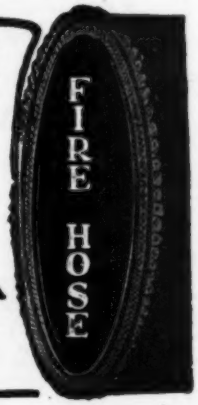

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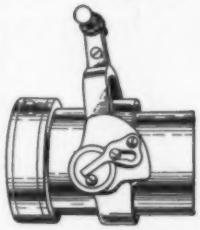

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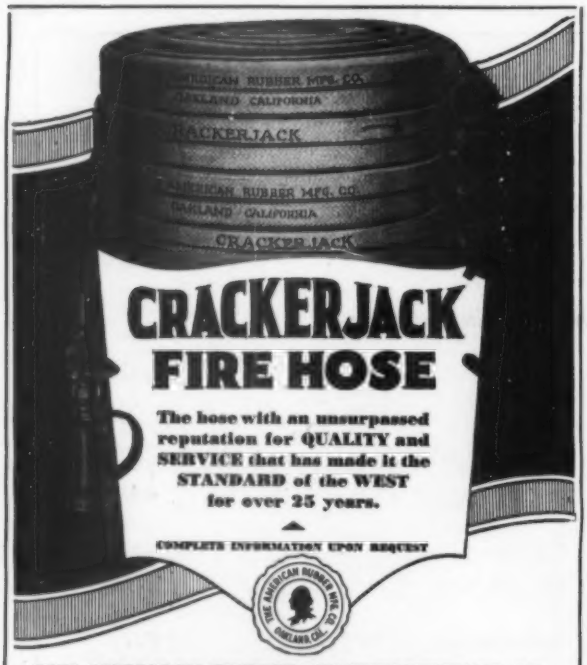
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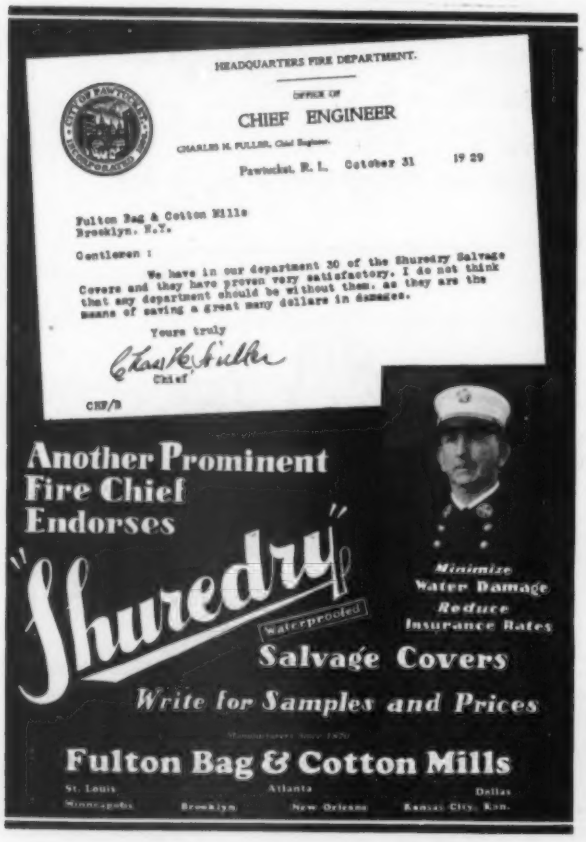
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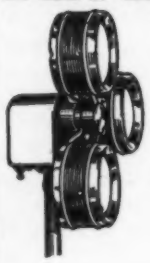

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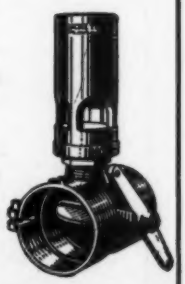

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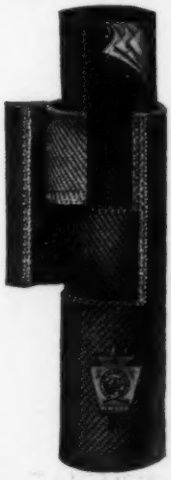

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